

**Revision A:**

- Compressor has been Changed.

Please void OB455.

# OUTDOOR UNIT SERVICE MANUAL

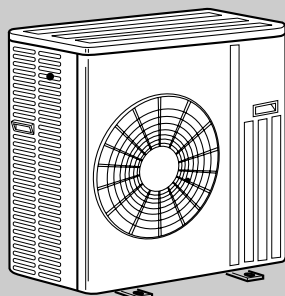


**No. OB455  
REVISED EDITION-A**

**Wireless type  
Models**

**MUZ-GB50VA - E1**

**Indoor unit service manual  
MSZ-GB-VA Series (OB454)  
Refrigerant service manual  
R410A REFRIGERANT (OBR01)**



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**NOTE:**

- This service manual describes technical data of the outdoor units.



**Revision A:**

- Compressor has been changed.

	Model	RoHS PARTS LIST number
Previous	SNB130FLDH	E12 851 900
New	SNB130FLDH1	E12 939 900

**1****TECHNICAL CHANGES****MUZ-GA50VA -<sup>[E1]</sup> → MUZ- GB50VA -<sup>[E1]</sup>**

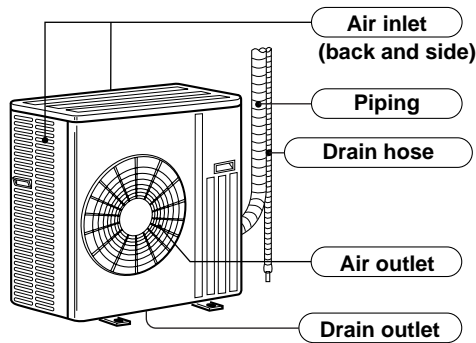
1. Refrigerant filling capacity has been changed.
2. Outdoor electronic control P.C. board has been changed.

## 2

# PART NAMES AND FUNCTIONS

### MUZ-GB50VA

### ACCESSORIES



		MUZ-GB50VA
①	Drain socket	1
②	Drain cap $\phi 33$	2

## 3

# SPECIFICATION

Outdoor model			MUZ-GB50VA	
Function			Cooling	Heating
Power supply			Single phase 230V,50Hz	
Capacity	Capacity Rated frequency(Min.-Max.)	kW	5.0(0.9-5.8)	5.8(0.9-7.8)
	Dehumidification	ℓ /h	2.5	—
	Air flow *1(High/Low)	m <sup>3</sup> /h	2,940/1,650	2,940/2,210
	Power outlet	A	20	
	Running current *1	A	7.23	7.43
	Power input *1	W	1,610	1,660
	Power factor *1	%	97	
Electrical data	Starting current *1	A	7.46	
	Compressor motor current *1	A	6.91	7.11
	Fan motor current *1	A	0.32	
Coefficient of performance(C.O.P) *1			3.03	3.41
Compressor	Model	SNB130FLDH or SNB130FLDH1		
	Output	W	850	
	Winding resistance(at 20°C)	Ω	U-V 0.45 W-U 0.45 V-W 0.45	
Fan motor	Model	RC0J60-AA		
	Winding resistance(at 20°C)	Ω	BLK-WHT 15.2 WHT-RED 15.2 RED-BLK 15.2	
	Dimensions W×H×D	mm	840×850×330	
Weight			kg	
Special remarks	Sound level *1(High/Low)	dB(A)	52/51	55/53
	Fan speed (High/Low)	rpm	800/480	800/620
	Fan speed regulator		2	
	Refrigerant filling capacity(R410A)	kg	1.50	
	Refrigeration oil (Model)		NEO22	

NOTE : Test conditions are based on ISO 5151.

Cooling : Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C

Outdoor Dry-bulb temperature 35°C Wet-bulb temperature 24°C

Heating : Indoor Dry-bulb temperature 20°C Wet-bulb temperature 15°C

Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C

Refrigerant piping length (one way): 5m

\*1 Measured under rated operating frequency

## Specifications and rating conditions of main electric parts

Item	Model	MUZ-GB50VA
Current transformer	(CT1,2)	ETQ19Z68AY
Current transformer	(CT61)	ETQ19Z53AY
Smoothing capacitor	(CB1,2,3)	560 $\mu$ F 450V
Fuse	(F64)	250V 2A
Fuse	(F801)	250V 3.15A
Fuse	(F911)	250V 1A
Expansion valve coil	(LEV)	CAM-MD12ME
Intelligent power module	(IPM)	PS21244-A
Intelligent power module	(HC930)	PS21661-RZ
Reactor	(L)	340 $\mu$ H 20A
Power factor controller	(PFC)	PS51259-A
Resistor	(R64A,B)	10 $\Omega$ 10W
Resistor	(R937A,B)	1.1 $\Omega$ 2W 2%
Resistor	(RS1~4)	0.04 $\Omega$ 7W
Solenoid coil relay	(SSR61)	TLP3506
Terminal block	(TB1)	3P
Terminal block	(TB2)	3P
Relay	(X64)	G4A
R.V. coil	(21S4)	LD30013

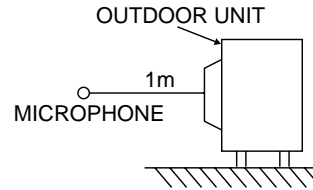
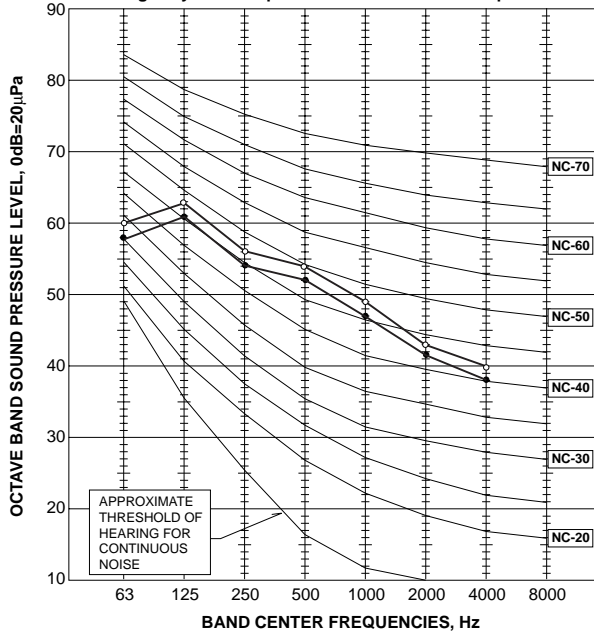
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# NOISE CRITERIA CURVES

## MUZ-GB50VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
High	COOLING	52	●—●
	HEATING	55	○—○

Test conditions,  
 Cooling : Dry-bulb temperature 35°C Wet-bulb temperature 24°C  
 Heating : Dry-bulb temperature 7°C Wet-bulb temperature 6°C



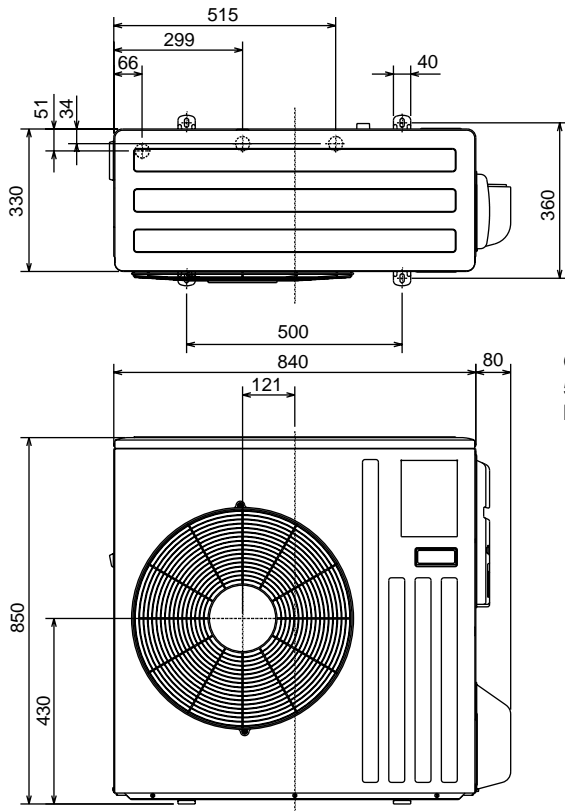
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# OUTLINES AND DIMENSIONS

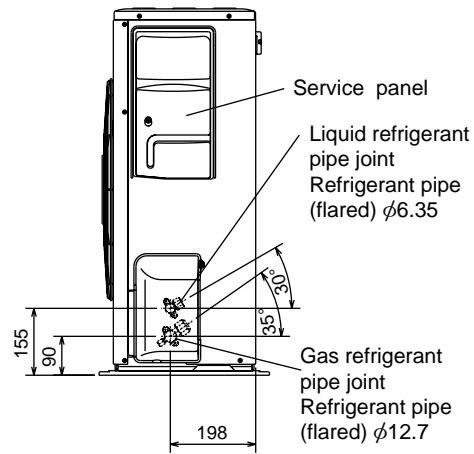
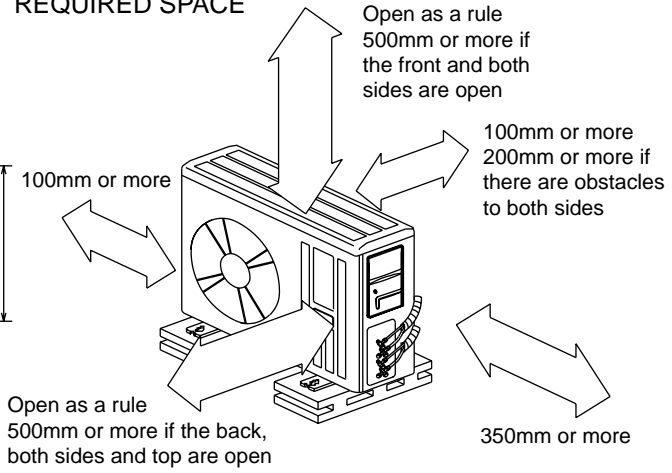
MUZ-GB50VA

Unit: mm

## OUTDOOR UNIT



### REQUIRED SPACE

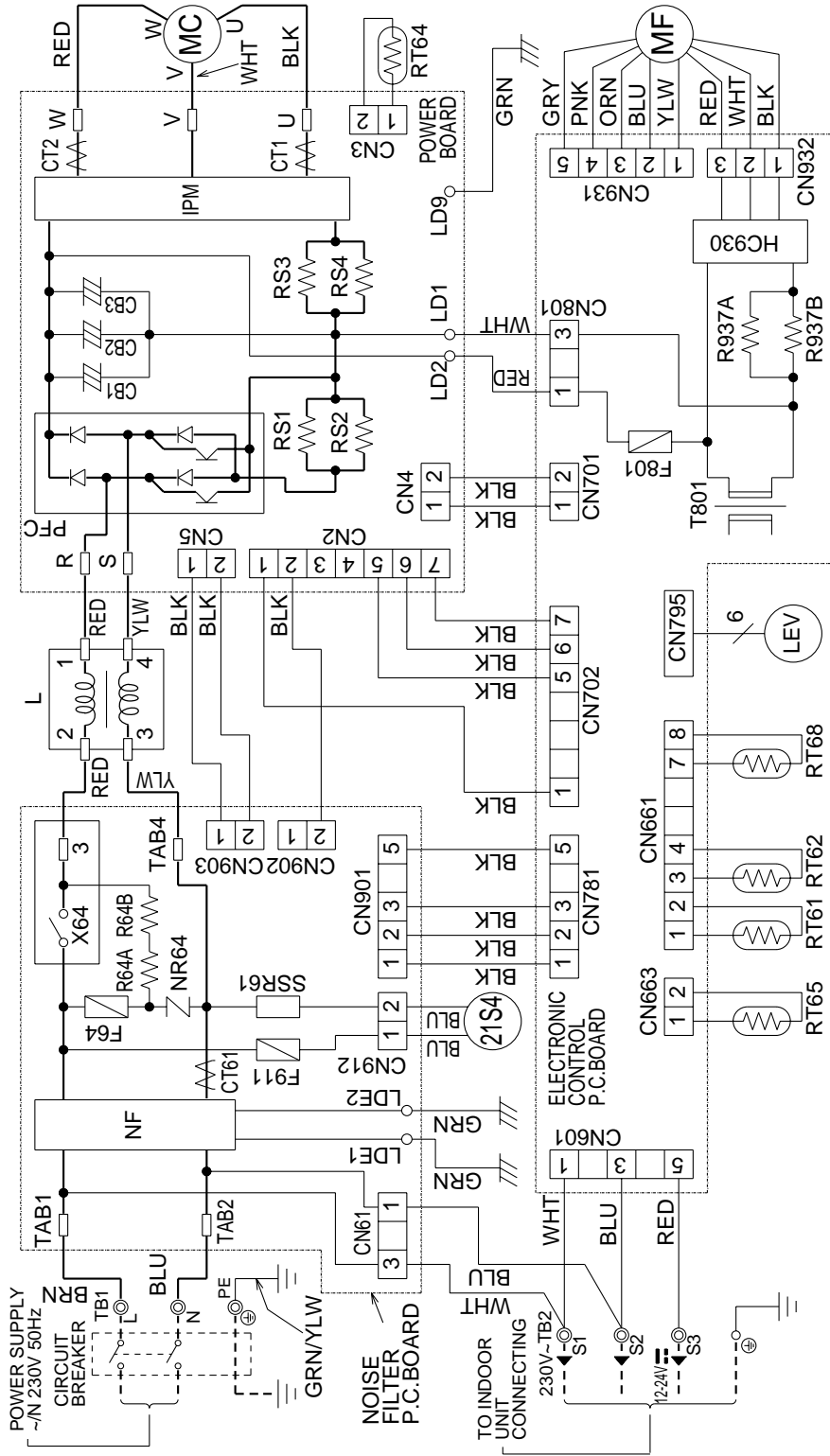


# 6

# WIRING DIAGRAM

## MUZ-GB50VA

### OUTDOOR UNIT



- NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
  2. Use copper conductors only (for field wiring).
  3. Symbols below indicate.
    - ⊙: Terminal block
    - : Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR	MC	COMPRESSOR	RT65	FIN TEMPERATURE THERMISTOR
CT1.2	CURRENT TRANSFORMER	MF	OUTDOOR FAN MOTOR	RT66	AMBIENT TEMPERATURE THERMISTOR
CT61	CURRENT TRANSFORMER	NF	NOISE FILTER	RT68	OUTDOOR HEAT EXCHANGER TEMPERATURE THERMISTOR
F64	FUSE (T2AL 250V)	NR64	VARIATOR	SSR61	SOLENOID COIL RELAY
F801	FUSE (T3.15AL 250V)	PFC	POWER FACTOR CONTROLLER	T801	TRANSFORMER
F911	FUSE (T1AL 250V)	R64A,B	RESISTOR	TB1	TERMINAL BLOCK
HC930	INTELLIGENT POWER MODULE	R937A,B	RESISTOR	TB2	TERMINAL BLOCK
IPM	INTELLIGENT POWER MODULE	RS1~4	RESISTOR	X64	RELAY
L	REACTOR	RT61	DEFROST THERMISTOR	21S4	R.V. COIL
LEV	EXPANSION VALVE COIL	RT62	DISCHARGE TEMPERATURE THERMISTOR		

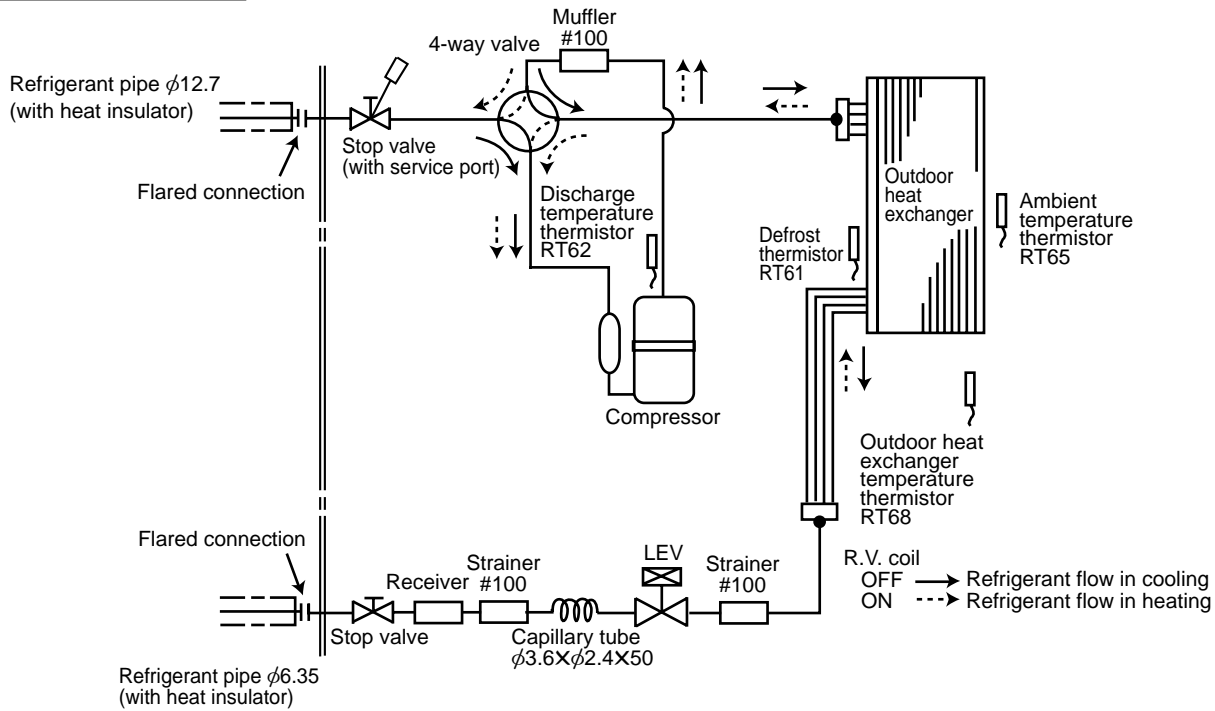
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# REFRIGERANT SYSTEM DIAGRAM

MUZ-GB50VA

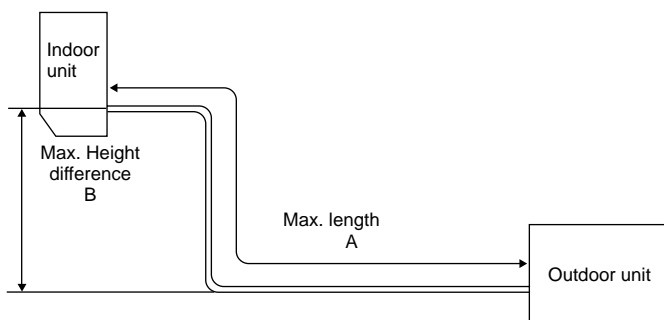
Unit:mm

## OUTDOOR UNIT



## MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFFERENCE

Model	Refrigerant piping : m		Piping size O.D : mm	
	Max. length	Max. Height difference	Gas	Liquid
	A	B		
MUZ-GB50VA	30	15	12.7	6.35



## ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)					
		7m	10m	15m	20m	25m	30m
MUZ-GB50VA	1,500	0	60	160	260	360	460

Calculation :  $X_g = 20g/m \times (\text{Refrigerant piping length (m)} - 7)$

NOTE : Refrigerant piping exceeding 7m requires additional refrigerant charge according to the calculation.



**MUZ-GB50VA**

The standard data contained in these specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed. The following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

**(1) GUARANTEED VOLTAGE**

207 ~ 253V, 50Hz

**(2) AIR FLOW**

Air flow should be set at MAX.

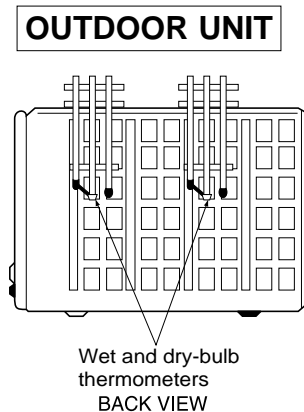
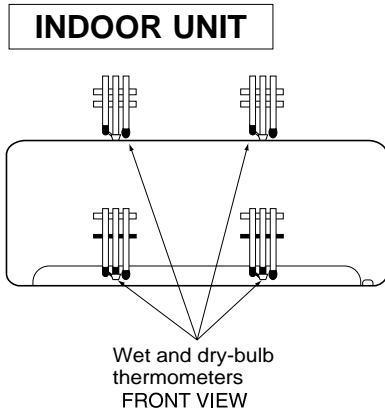
**(3) MAIN READINGS**

- |   |         |           |
|---|---------|-----------|
| (1) Indoor intake air wet-bulb temperature :  | °C [WB] | } Cooling |
| (2) Indoor outlet air wet-bulb temperature :  | °C [WB] |           |
| (3) Outdoor intake air dry-bulb temperature : | °C [DB] |           |
| (4) Total input:                              | W       | } Heating |
| (5) Indoor intake air dry-bulb temperature :  | °C [DB] |           |
| (6) Outdoor intake air wet-bulb temperature : | °C [WB] |           |
| (7) Total input :                             | W       |           |

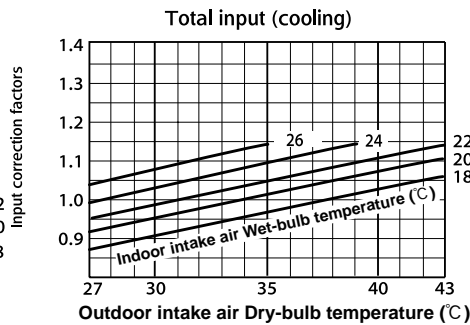
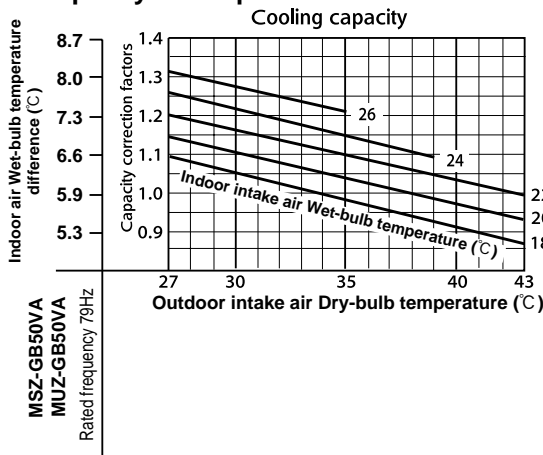
Indoor air wet/dry-bulb temperature difference on the left side of the following chart shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

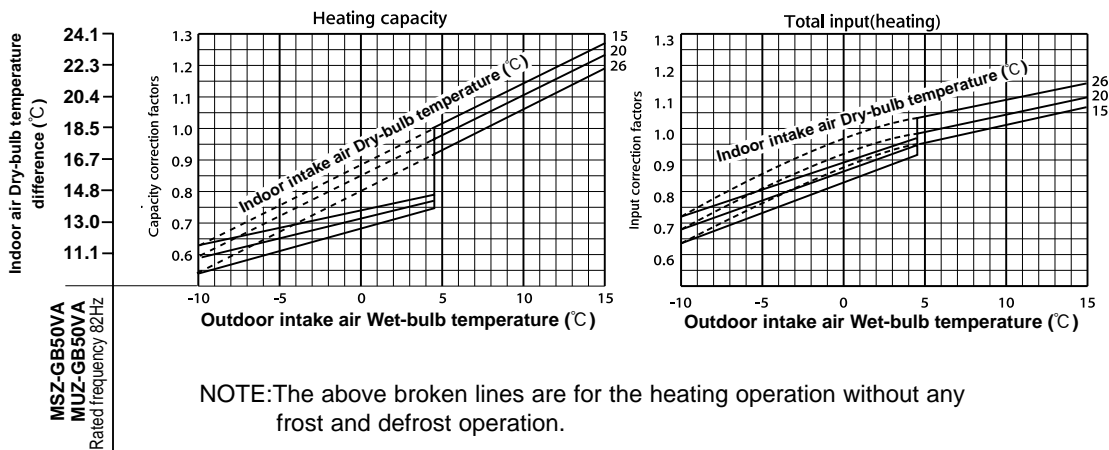
**How to measure the indoor air wet-bulb / dry-bulb temperature difference**

- Attach at least 2 sets of wet and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
- Attach at least 2 sets of wet and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
- Check that the air filter is cleaned.
- Open windows and doors of room.
- Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
- When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
- 10 minutes later, measure temperature again and check that the temperature does not change.



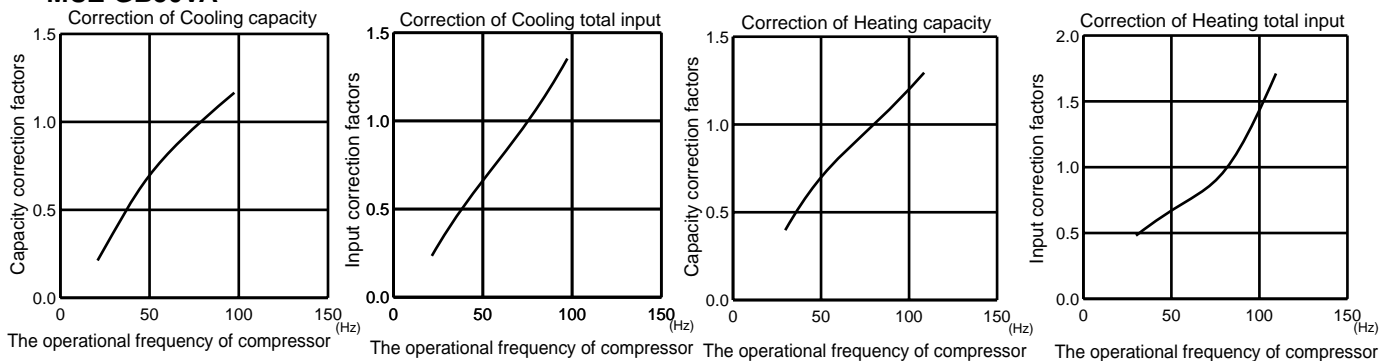
**8-1. Capacity and input curves**





## 8-2. Capacity and input correction by operational frequency of compressor

### MUZ-GB50VA



## 8-3. TEST RUN OPERATION (How to operate fixed-frequency operation)

1. Press EMERGENCY OPERATION switch to COOL or HEAT mode (COOL : Press once, HEAT : Press twice).
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor operates at rated frequency in COOL mode or 58Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (Operation frequency of compressor varies).
6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

## 8-4. OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

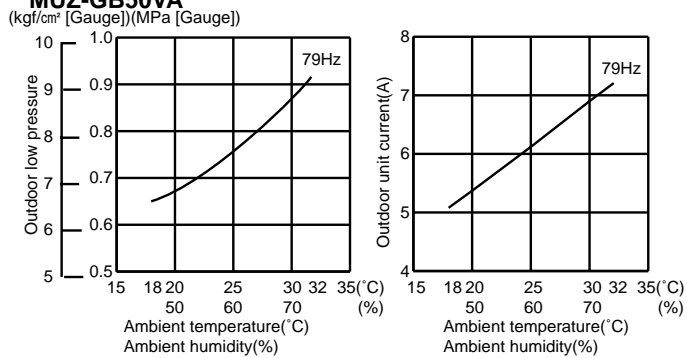
NOTE: The unit of pressure has been changed to MPa based on the international system of units (SI unit system).  
The conversion factor is: **1(MPa [Gauge] = 10.2 (Kgf/cm<sup>2</sup> [Gauge])**

### COOL operation

- ① Both indoor and outdoor unit are under the same temperature/humidity condition.
- ② Operation : TEST RUN OPERATION (refer to 8-3.)

Dry-bulb temperature(°C)	Relative humidity(%)
20	50
25	60
30	70

#### MUZ-GB50VA

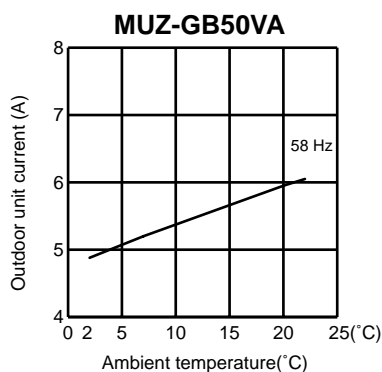


### HEAT operation

① Condition :

	Indoor	Outdoor			
Dry bulb temperature (°C)	20.0	2	7	15	20.0
Wet bulb temperature (°C)	14.5	1	6	12	14.5

- ② Operation : TEST RUN OPERATION (refer to 8-3.)



**PERFORMANCE DATA COOL operation Rated frequency 79Hz**

**MSZ-GB50VA : MUZ-GB50VA**

CAPACITY:5.0(kW) SHF:0.69 INPUT:1650(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	5.88	3.00	0.51	1320	5.63	2.87	0.51	1386	5.40	2.75	0.51	1452	5.20	2.65	0.51	1518
21	20	6.13	2.39	0.39	1386	5.88	2.29	0.39	1469	5.70	2.22	0.39	1502	5.50	2.15	0.39	1568
22	18	5.88	3.23	0.55	1320	5.63	3.09	0.55	1386	5.40	2.97	0.55	1452	5.20	2.86	0.55	1518
22	20	6.13	2.63	0.43	1386	5.88	2.53	0.43	1469	5.70	2.45	0.43	1502	5.50	2.37	0.43	1568
22	22	6.38	1.98	0.31	1436	6.15	1.91	0.31	1526	6.00	1.86	0.31	1568	5.75	1.78	0.31	1634
23	18	5.88	3.47	0.59	1320	5.63	3.32	0.59	1386	5.40	3.19	0.59	1452	5.20	3.07	0.59	1518
23	20	6.13	2.88	0.47	1386	5.88	2.76	0.47	1469	5.70	2.68	0.47	1502	5.50	2.59	0.47	1568
23	22	6.38	2.23	0.35	1436	6.15	2.15	0.35	1526	6.00	2.10	0.35	1568	5.75	2.01	0.35	1634
24	18	5.88	3.70	0.63	1320	5.63	3.54	0.63	1386	5.40	3.40	0.63	1452	5.20	3.28	0.63	1518
24	20	6.13	3.12	0.51	1386	5.88	3.00	0.51	1469	5.70	2.91	0.51	1502	5.50	2.81	0.51	1568
24	22	6.38	2.49	0.39	1436	6.15	2.40	0.39	1526	6.00	2.34	0.39	1568	5.75	2.24	0.39	1634
24	24	6.70	1.81	0.27	1502	6.45	1.74	0.27	1584	6.30	1.70	0.27	1634	6.10	1.65	0.27	1716
25	18	5.88	3.94	0.67	1320	5.63	3.77	0.67	1386	5.40	3.62	0.67	1452	5.20	3.48	0.67	1518
25	20	6.13	3.37	0.55	1386	5.88	3.23	0.55	1469	5.70	3.14	0.55	1502	5.50	3.03	0.55	1568
25	22	6.38	2.74	0.43	1436	6.15	2.64	0.43	1526	6.00	2.58	0.43	1568	5.75	2.47	0.43	1634
25	24	6.70	2.08	0.31	1502	6.45	2.00	0.31	1584	6.30	1.95	0.31	1634	6.10	1.89	0.31	1716
26	18	5.88	4.17	0.71	1320	5.63	3.99	0.71	1386	5.40	3.83	0.71	1452	5.20	3.69	0.71	1518
26	20	6.13	3.61	0.59	1386	5.88	3.47	0.59	1469	5.70	3.36	0.59	1502	5.50	3.25	0.59	1568
26	22	6.38	3.00	0.47	1436	6.15	2.89	0.47	1526	6.00	2.82	0.47	1568	5.75	2.70	0.47	1634
26	24	6.70	2.35	0.35	1502	6.45	2.26	0.35	1584	6.30	2.21	0.35	1634	6.10	2.14	0.35	1716
26	26	6.90	1.59	0.23	1584	6.70	1.54	0.23	1667	6.60	1.52	0.23	1716	6.40	1.47	0.23	1766
27	18	5.88	4.41	0.75	1320	5.63	4.22	0.75	1386	5.40	4.05	0.75	1452	5.20	3.90	0.75	1518
27	20	6.13	3.86	0.63	1386	5.88	3.70	0.63	1469	5.70	3.59	0.63	1502	5.50	3.47	0.63	1568
27	22	6.38	3.25	0.51	1436	6.15	3.14	0.51	1526	6.00	3.06	0.51	1568	5.75	2.93	0.51	1634
27	24	6.70	2.61	0.39	1502	6.45	2.52	0.39	1584	6.30	2.46	0.39	1634	6.10	2.38	0.39	1716
27	26	6.90	1.86	0.27	1584	6.70	1.81	0.27	1667	6.60	1.78	0.27	1716	6.40	1.73	0.27	1766
28	18	5.88	4.64	0.79	1320	5.63	4.44	0.79	1386	5.40	4.27	0.79	1452	5.20	4.11	0.79	1518
28	20	6.13	4.10	0.67	1386	5.88	3.94	0.67	1469	5.70	3.82	0.67	1502	5.50	3.69	0.67	1568
28	22	6.38	3.51	0.55	1436	6.15	3.38	0.55	1526	6.00	3.30	0.55	1568	5.75	3.16	0.55	1634
28	24	6.70	2.88	0.43	1502	6.45	2.77	0.43	1584	6.30	2.71	0.43	1634	6.10	2.62	0.43	1716
28	26	6.90	2.14	0.31	1584	6.70	2.08	0.31	1667	6.60	2.05	0.31	1716	6.40	1.98	0.31	1766
29	18	5.88	4.88	0.83	1320	5.63	4.67	0.83	1386	5.40	4.48	0.83	1452	5.20	4.32	0.83	1518
29	20	6.13	4.35	0.71	1386	5.88	4.17	0.71	1469	5.70	4.05	0.71	1502	5.50	3.91	0.71	1568
29	22	6.38	3.76	0.59	1436	6.15	3.63	0.59	1526	6.00	3.54	0.59	1568	5.75	3.39	0.59	1634
29	24	6.70	3.15	0.47	1502	6.45	3.03	0.47	1584	6.30	2.96	0.47	1634	6.10	2.87	0.47	1716
29	26	6.90	2.42	0.35	1584	6.70	2.35	0.35	1667	6.60	2.31	0.35	1716	6.40	2.24	0.35	1766
30	18	5.88	5.11	0.87	1320	5.63	4.89	0.87	1386	5.40	4.70	0.87	1452	5.20	4.52	0.87	1518
30	20	6.13	4.59	0.75	1386	5.88	4.41	0.75	1469	5.70	4.28	0.75	1502	5.50	4.13	0.75	1568
30	22	6.38	4.02	0.63	1436	6.15	3.87	0.63	1526	6.00	3.78	0.63	1568	5.75	3.62	0.63	1634
30	24	6.70	3.42	0.51	1502	6.45	3.29	0.51	1584	6.30	3.21	0.51	1634	6.10	3.11	0.51	1716
30	26	6.90	2.69	0.39	1584	6.70	2.61	0.39	1667	6.60	2.57	0.39	1716	6.40	2.50	0.39	1766
31	18	5.88	5.35	0.91	1320	5.63	5.12	0.91	1386	5.40	4.91	0.91	1452	5.20	4.73	0.91	1518
31	20	6.13	4.84	0.79	1386	5.88	4.64	0.79	1469	5.70	4.50	0.79	1502	5.50	4.35	0.79	1568
31	22	6.38	4.27	0.67	1436	6.15	4.12	0.67	1526	6.00	4.02	0.67	1568	5.75	3.85	0.67	1634
31	24	6.70	3.69	0.55	1502	6.45	3.55	0.55	1584	6.30	3.47	0.55	1634	6.10	3.36	0.55	1716
31	26	6.90	2.97	0.43	1584	6.70	2.88	0.43	1667	6.60	2.84	0.43	1716	6.40	2.75	0.43	1766
32	18	5.88	5.58	0.95	1320	5.63	5.34	0.95	1386	5.40	5.13	0.95	1452	5.20	4.94	0.95	1518
32	20	6.13	5.08	0.83	1386	5.88	4.88	0.83	1469	5.70	4.73	0.83	1502	5.50	4.57	0.83	1568
32	22	6.38	4.53	0.71	1436	6.15	4.37	0.71	1526	6.00	4.26	0.71	1568	5.75	4.08	0.71	1634
32	24	6.70	3.95	0.59	1502	6.45	3.81	0.59	1584	6.30	3.72	0.59	1634	6.10	3.60	0.59	1716
32	26	6.90	3.24	0.47	1584	6.70	3.15	0.47	1667	6.60	3.10	0.47	1716	6.40	3.01	0.47	1766

**NOTE** Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature  
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

**PERFORMANCE DATA COOL operation Rated frequency 79Hz**

**MSZ-GB50VA : MUZ-GB50VA**

CAPACITY:5.0(kW) SHF:0.69 INPUT:1650(W)

		OUTDOOR DB(°C)											
INDOOR DB(°C)	INDOOR WB(°C)	35				40				43			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.90	2.50	0.51	1617	4.50	2.30	0.51	1716	4.30	2.19	0.51	1749
21	20	5.15	2.01	0.39	1683	4.80	1.87	0.39	1766	4.60	1.79	0.39	1815
22	18	4.90	2.70	0.55	1617	4.50	2.48	0.55	1716	4.30	2.37	0.55	1749
22	20	5.15	2.21	0.43	1683	4.80	2.06	0.43	1766	4.60	1.98	0.43	1815
22	22	5.45	1.69	0.31	1749	5.10	1.58	0.31	1848	4.90	1.52	0.31	1881
23	18	4.90	2.89	0.59	1617	4.50	2.66	0.59	1716	4.30	2.54	0.59	1749
23	20	5.15	2.42	0.47	1683	4.80	2.26	0.47	1766	4.60	2.16	0.47	1815
23	22	5.45	1.91	0.35	1749	5.10	1.79	0.35	1848	4.90	1.72	0.35	1881
24	18	4.90	3.09	0.63	1617	4.50	2.84	0.63	1716	4.30	2.71	0.63	1749
24	20	5.15	2.63	0.51	1683	4.80	2.45	0.51	1766	4.60	2.35	0.51	1815
24	22	5.45	2.13	0.39	1749	5.10	1.99	0.39	1848	4.90	1.91	0.39	1881
24	24	5.75	1.55	0.27	1815	5.40	1.46	0.27	1898	5.25	1.42	0.27	1947
25	18	4.90	3.28	0.67	1617	4.50	3.02	0.67	1716	4.30	2.88	0.67	1749
25	20	5.15	2.83	0.55	1683	4.80	2.64	0.55	1766	4.60	2.53	0.55	1815
25	22	5.45	2.34	0.43	1749	5.10	2.19	0.43	1848	4.90	2.11	0.43	1881
25	24	5.75	1.78	0.31	1815	5.40	1.67	0.31	1898	5.25	1.31	0.25	1947
26	18	4.90	3.48	0.71	1617	4.50	3.20	0.71	1716	4.30	3.05	0.71	1749
26	20	5.15	3.04	0.59	1683	4.80	2.83	0.59	1766	4.60	2.71	0.59	1815
26	22	5.45	2.56	0.47	1749	5.10	2.40	0.47	1848	4.90	2.30	0.47	1881
26	24	5.75	2.01	0.35	1815	5.40	1.89	0.35	1898	5.25	1.21	0.23	1947
26	26	6.05	1.39	0.23	1881	5.70	1.31	0.23	1964	5.50	1.27	0.23	2013
27	18	4.90	3.68	0.75	1617	4.50	3.38	0.75	1716	4.30	3.23	0.75	1749
27	20	5.15	3.24	0.63	1683	4.80	3.02	0.63	1766	4.60	2.90	0.63	1815
27	22	5.45	2.78	0.51	1749	5.10	2.60	0.51	1848	4.90	2.50	0.51	1881
27	24	5.75	2.24	0.39	1815	5.40	2.11	0.39	1898	5.25	1.10	0.21	1947
27	26	6.05	1.63	0.27	1881	5.70	1.54	0.27	1964	5.50	1.49	0.27	2013
28	18	4.90	3.87	0.79	1617	4.50	3.56	0.79	1716	4.30	3.40	0.79	1749
28	20	5.15	3.45	0.67	1683	4.80	3.22	0.67	1766	4.60	3.08	0.67	1815
28	22	5.45	3.00	0.55	1749	5.10	2.81	0.55	1848	4.90	2.70	0.55	1881
28	24	5.75	2.47	0.43	1815	5.40	2.32	0.43	1898	5.25	1.00	0.19	1947
28	26	6.05	1.88	0.31	1881	5.70	1.77	0.31	1964	5.50	1.71	0.31	2013
29	18	4.90	4.07	0.83	1617	4.50	3.74	0.83	1716	4.30	3.57	0.83	1749
29	20	5.15	3.66	0.71	1683	4.80	3.41	0.71	1766	4.60	3.27	0.71	1815
29	22	5.45	3.22	0.59	1749	5.10	3.01	0.59	1848	4.90	2.89	0.59	1881
29	24	5.75	2.70	0.47	1815	5.40	2.54	0.47	1898	5.25	0.89	0.17	1947
29	26	6.05	2.12	0.35	1881	5.70	2.00	0.35	1964	5.50	1.93	0.35	2013
30	18	4.90	4.26	0.87	1617	4.50	3.92	0.87	1716	4.30	3.74	0.87	1749
30	20	5.15	3.86	0.75	1683	4.80	3.60	0.75	1766	4.60	3.45	0.75	1815
30	22	5.45	3.43	0.63	1749	5.10	3.21	0.63	1848	4.90	3.09	0.63	1881
30	24	5.75	2.93	0.51	1815	5.40	2.75	0.51	1898	5.25	0.79	0.15	1947
30	26	6.05	2.36	0.39	1881	5.70	2.22	0.39	1964	5.50	2.15	0.39	2013
31	18	4.90	4.46	0.91	1617	4.50	4.10	0.91	1716	4.30	3.91	0.91	1749
31	20	5.15	4.07	0.79	1683	4.80	3.79	0.79	1766	4.60	3.63	0.79	1815
31	22	5.45	3.65	0.67	1749	5.10	3.42	0.67	1848	4.90	3.28	0.67	1881
31	24	5.75	3.16	0.55	1815	5.40	2.97	0.55	1898	5.25	0.68	0.13	1947
31	26	6.05	2.60	0.43	1881	5.70	2.45	0.43	1964	5.50	2.37	0.43	2013
32	18	4.90	4.66	0.95	1617	4.50	4.28	0.95	1716	4.30	4.09	0.95	1749
32	20	5.15	4.27	0.83	1683	4.80	3.98	0.83	1766	4.60	3.82	0.83	1815
32	22	5.45	3.87	0.71	1749	5.10	3.62	0.71	1848	4.90	3.48	0.71	1881
32	24	5.75	3.39	0.59	1815	5.40	3.19	0.59	1898	5.25	0.58	0.11	1947
32	26	6.05	2.84	0.47	1881	5.70	2.68	0.47	1964	5.50	2.59	0.47	2013

**NOTE** Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature  
 SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

**PERFORMANCE DATA HEAT operation**

**MSZ-GB50VA : MUZ-GB50VA** Rated frequency 75Hz

CAPACITY:5.8(kW) INPUT:1700(W)

INDOOR DB(°C)	OUTDOOR WB(°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	3.65	1105	4.41	1326	5.16	1496	5.92	1615	6.67	1717	7.37	1768	8.12	1802
21	3.48	1190	4.18	1411	4.93	1564	5.63	1683	6.38	1768	7.08	1819	7.80	1887
26	3.13	1275	3.89	1496	4.58	1649	5.34	1768	6.09	1853	6.79	1904	7.54	1955

**NOTE** Q : Total capacity (kW) INPUT : Total power input (W) DB : Dry-bulb temperature WB : Wet-bulb temperature

# 9 ACTUATOR CONTROL

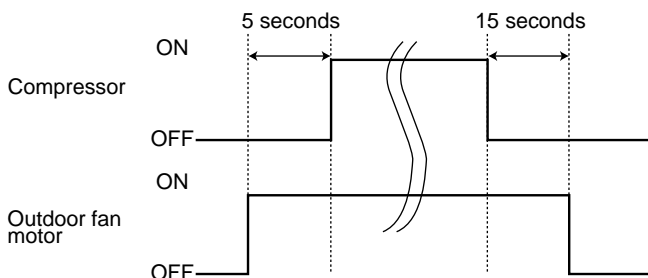
## MUZ-GB50VA

### 9-1. Outdoor fan motor control

The fan motor turns ON/OFF, interlocking with the compressor.

[ON] The fan motor turns ON 5 seconds before the compressor starts up.

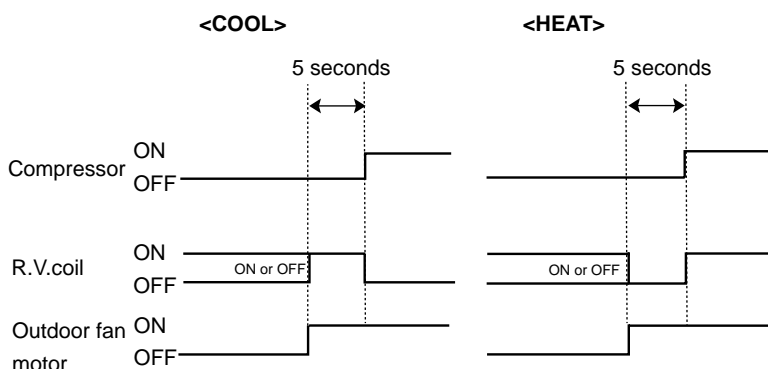
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



### 9-2. R.V. coil control

- Heating ..... ON
- Cooling ..... OFF
- Dry ..... OFF

**NOTE:** The 4-way valve reverses for 5 seconds right before start-up of the compressor.



### 9-3. Relation between main sensor and actuator

#### <MUZ-GB50>

Sensor	Purpose	Actuator			
		Compressor	LEV	Outdoor fan motor	R.V. coil
Discharge temperature thermistor	Protection	○	○		
Indoor pipe temperature thermistor	Defrosting Protection	○	○	○	
Defrost thermistor	Defrosting	○	○	○	○
Fin temperature thermistor	Protection	○		○	
Outdoor heat exchanger temperature	Protection	○	○	○	
Ambient temperature thermistor	Protection	○	○	○	

## 10

## TROUBLESHOOTING

### MUZ-GB50VA

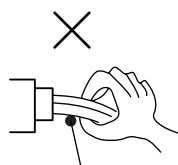
#### 10-1. Cautions on troubleshooting

##### 1. Before troubleshooting, check the following:

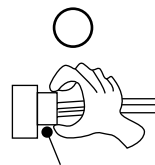
- 1) Check the power supply voltage.
- 2) Check the indoor/outdoor connecting wire for mis-wiring.

##### 2. Take care the following during servicing.

- 1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn off the breaker and / or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
- 3) When removing the electrical parts, be careful to the residual voltage of smoothing capacitor.
- 4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
- 5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.



Lead wiring



Housing point

##### 3. Troubleshooting procedure

- 1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
- 2) Before servicing check that the connector and terminal are connected properly.
- 3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
- 4) When troubleshooting, refer to 10-2., 10-3. and 10-4.

## 10-2. Failure mode recall function

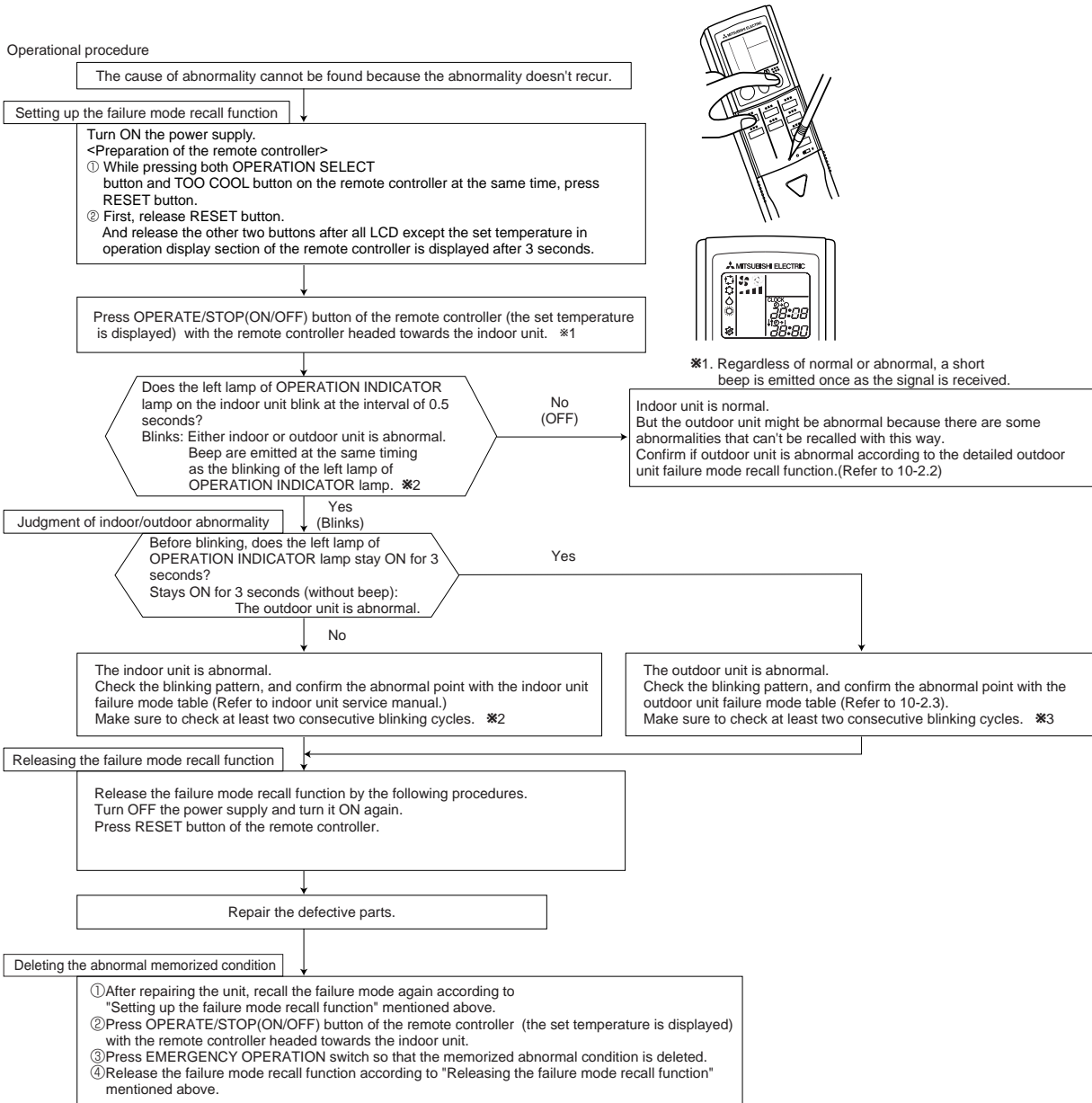
### Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (10-4.) disappears, the memorized failure details can be recalled.

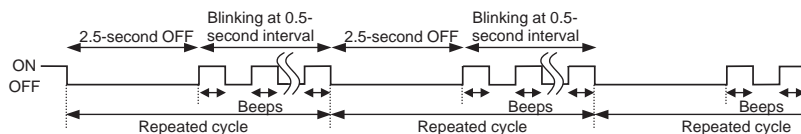
This mode is very useful when the unit needs to be repaired for the abnormality which doesn't recur.

### 1. Flow chart of failure mode recall function for the indoor/outdoor unit

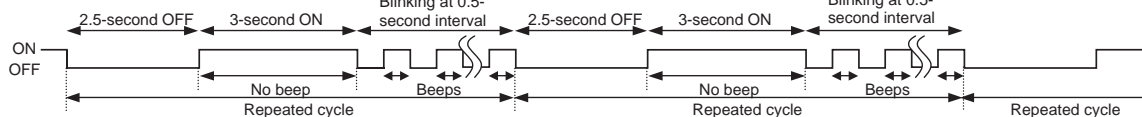


Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.  
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:



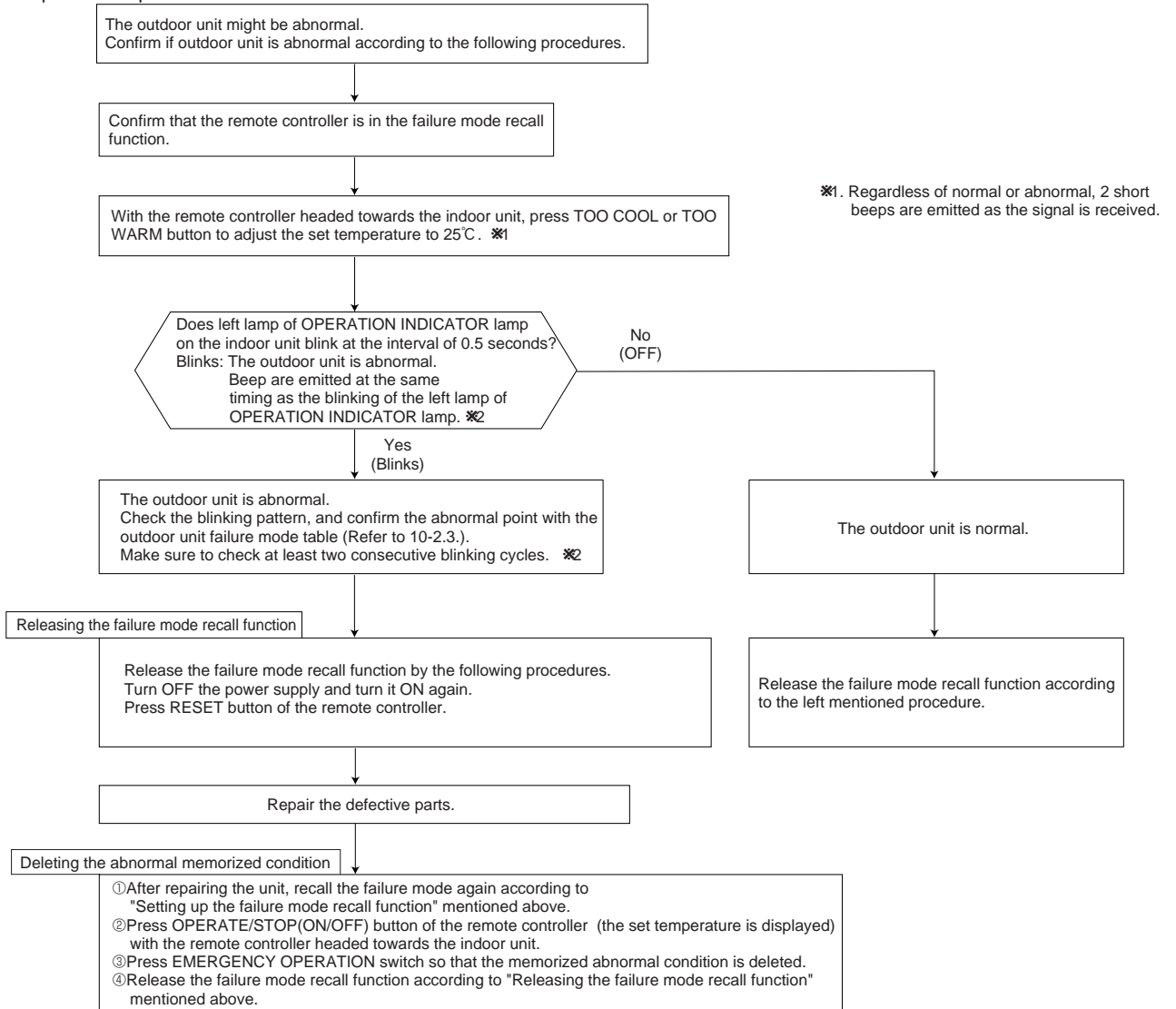
※3. Blinking pattern when the outdoor unit is abnormal:





## 2. Flow chart of the detailed outdoor unit failure mode recall function

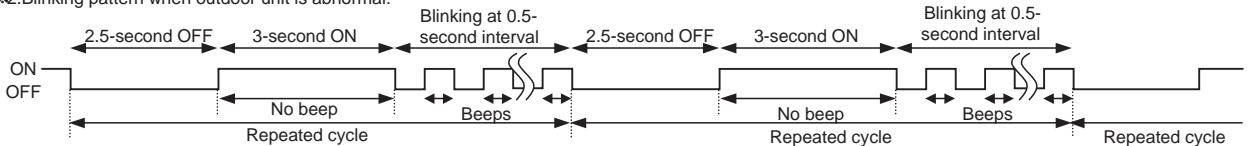
### Operational procedure



Note1. Make sure to release the failure mode recall function once it's set up, otherwise the unit cannot operate properly.

2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

\*2. Blinking pattern when outdoor unit is abnormal:



### 3. Outdoor unit failure mode table MUZ-GB50VA

The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)		Condition	Correspondence	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
OFF	None (Normal)	—	—	—	—	—
2-time flash	Outdoor power system	Lighting	Lighting	When over current protection stop is continuously performed three times within 1 minute after the compressor gets started, or when converter protection stop or bus-bar voltage protection stop is continuously performed three times within 3 minutes after start-up.	<ul style="list-style-type: none"> <li>• Check the connection of the compressor connecting wire.</li> <li>• Refer to 10-6.Ⓐ "How to check inverter / compressor".</li> <li>• Check the stop valve.</li> </ul>	○
3-time flash	Discharge temperature thermistor	Lighting	Once	When thermistor shorts or opens during compressor running.	<ul style="list-style-type: none"> <li>• Refer to 10-6.Ⓑ "Check of outdoor thermistors".</li> </ul>	○
	Defrost thermistor	Lighting	Once			
	Ambient temperature thermistor	Lighting	Twice			
	Fin temperature thermistor	Lighting	3 times			
	P.C. board temperature thermistor	Lighting	4 times			
Outdoor heat exchanger temperature thermistor	Lighting	9 times	<ul style="list-style-type: none"> <li>• Replace the outdoor electronic control P.C. board.</li> <li>• Refer to 10-6.Ⓒ "Check of outdoor thermistors".</li> </ul>			
4-time flash	Over current	Once	Goes out	When 28A current flow into intelligent power module.	<ul style="list-style-type: none"> <li>• Reconnect compressor connector.</li> <li>• Refer to 10-6.Ⓐ "How to check inverter/ compressor."</li> <li>• Check the stop valve.</li> </ul>	—
5-time flash	Discharge temperature	Lighting	Lighting	When discharge temperature exceeds 116°C during operation. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	<ul style="list-style-type: none"> <li>• Check refrigerant circuit and refrigerant amount.</li> <li>• Refer to 10-6.Ⓒ "Check of LEV".</li> </ul>	—
6-time flash	High pressure	Lighting	Lighting	When the outdoor heat exchanger temperature exceeds 70°C during cooling or the indoor gas pipe temperature exceeds 70°C during heating.	<ul style="list-style-type: none"> <li>• Check refrigerant circuit and refrigerant amount.</li> <li>• Check the stop valve.</li> </ul>	—
7-time flash	Fin temperature	3 times	Goes out	When the fin temperature exceeds 87°C during operation.	<ul style="list-style-type: none"> <li>• Check around outdoor unit.</li> <li>• Check outdoor unit air passage.</li> <li>• Refer to 10-6.Ⓒ "Check of outdoor fan motor".</li> </ul>	—
	P.C. board temperature	4 times	Goes out	When the P.C. board temperature exceeds 70°C during operation.		
8-time flash	Outdoor fan motor	Lighting	Lighting	When failure occurs continuously three times within 30 seconds after the fan gets started.	<ul style="list-style-type: none"> <li>• Refer to 10-6.Ⓒ "Check of outdoor fan motor".</li> </ul>	—
9-time flash	Nonvolatile memory data	Lighting	5 times	When nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"> <li>• Replace the outdoor electronic control P.C. board.</li> </ul>	○
10-time flash	Discharge temperature	Lighting	Lighting	When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 39°C for more than 20 minutes.	<ul style="list-style-type: none"> <li>• Check refrigerant circuit and refrigerant amount.</li> <li>• Refer to 10-6.Ⓒ "Check of LEV".</li> </ul>	—

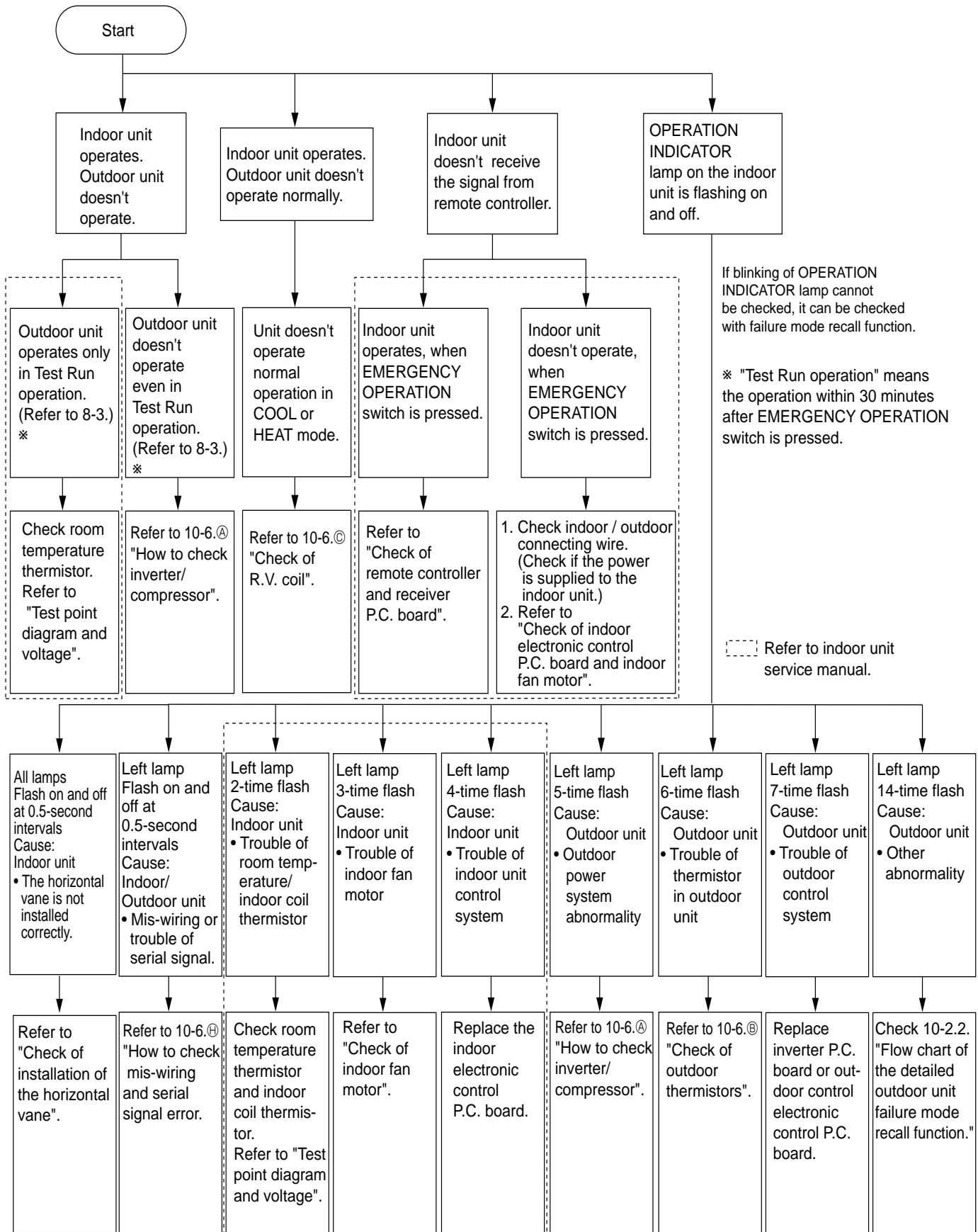
**NOTE :** Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-4.).

## MUZ-GB50VA

The left lamp of OPERATION INDICATOR lamp (Indoor unit)	Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)		Condition	Correspondence	Indoor/outdoor unit failure mode recall function
		LED 1	LED 2			
11-time flash	Communication error between P.C. boards	Lighting	6 times	Communication error occurs between the electronic control P.C. board and power board for more than 10 seconds.	• Check the connecting wire between outdoor electronic control P.C. board and power board.	—
				When the communication between boards protection stop is continuously performed twice.		○
	Current sensor	Lighting	7 times	When a short or open circuit is detected in the current sensor during compressor operating.	• Replace the power board.	—
				Current sensor protection stop is continuously performed twice.		○
	Zero cross detecting circuit	5 times	Goes out	When zero cross signal cannot be detected while the compressor is operating.	• Check the connecting wire among electronic control P.C. board, noise filter P.C. board and power board.	—
				The protection stop of the zero cross detecting circuit is continuously performed 10 times.		○
	Converter	5 times	Goes out	When a failure is detected in the operation of the converter during operation.	• Replace the power board.	—
Bus-bar voltage (1)	5 times	Goes out	When the bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating.			
Bus-bar voltage (2) *Even if this protection stop is performed continuously three times, it does not mean the abnormality in outdoor power system.	6 times	Goes out	When the bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.			

**NOTE** : Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-4.).

### 10-3. Instruction of troubleshooting



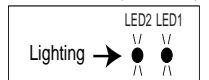
## 10-4. Troubleshooting check table

### MUZ-GB50VA

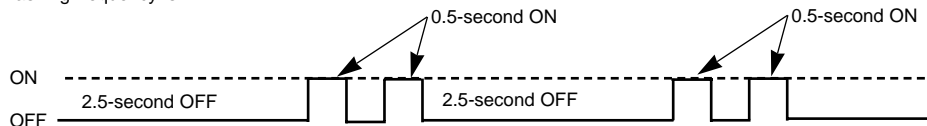
No.	Symptom	Indication		Abnormal point / Condition	Condition	Correspondence	
		LED1 (Red)	LED2 (Yellow)				
10	Outdoor unit does not operate.	Lightning	Twice	Outdoor power system	When over current protection stop is continuously performed three times within 1 minute after the compressor gets started, or when converter protection stop or bus-bar voltage protection stop is continuously performed three times within 3 minutes after start-up.	<ul style="list-style-type: none"> <li>• Check the connection of the compressor connecting wire.</li> <li>• Refer to 10-6.④ "How to check inverter/compressor".</li> <li>• Check the stop valve.</li> </ul>	
			3 times	Discharge temperature thermistor	When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 10 minutes of compressor start-up.	• Refer to 10-6.⑥ "Check of outdoor thermistors".	
			4 times	Fin temperature thermistor P.C board temperature thermistor	When a short or open circuit is detected in the thermistor during operation.	<ul style="list-style-type: none"> <li>• Refer to 10-6.⑥ "Check of outdoor thermistors".</li> <li>• Replace the outdoor electronic control P.C. board.</li> </ul>	
			5 times	Ambient temperature thermistor Outdoor heat exchanger temperature thermistor Defrost thermistor	When a short or open circuit is detected in the thermistor during operation.	When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 5 minutes (in cooling) and 10 minutes (in heating) of compressor start-up.	• Refer to 10-6.⑥ "Check of outdoor thermistors".
			6 times	Serial signal	When the communication fails between the indoor and outdoor unit for 3 minutes.	• Refer to 10-6.⑤ "How to check mis-wiring and serial signal error".	
			7 times	Nonvolatile memory data	When the nonvolatile memory data cannot be read properly.	• Replace the outdoor electronic control P.C. board.	
			8 times	Current sensor	Current sensor protection stop is continuously performed twice.	• Replace the power board.	
			11 times	Communication error between P.C. boards	When the communication protection stop between boards is continuously performed twice.	• Check the connecting wire between outdoor electronic control P.C. board and power board.	
			12 times	Zero cross detecting circuit	The protection stop of the zero cross detecting circuit is continuously performed 10 times.	• Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.	
			Twice	Goes out	IPM protection Lock protection	When over-current is detected after 30 minutes of compressor start-up. When over-current is detected within 30 minutes of compressor start-up	<ul style="list-style-type: none"> <li>• Reconnect compressor connector.</li> <li>• Refer to 10-6.④ "How to check inverter/compressor".</li> <li>• Check the stop valve.</li> <li>• Check the power module (PAM module).</li> </ul>
			3 times	Goes out	Discharge temperature protection	When discharge temperature exceeds 116°C during operation. compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	<ul style="list-style-type: none"> <li>• Check the amount of gas and refrigerant circuit.</li> <li>• Refer to 10-6.⑥ "Check of LEV".</li> </ul>
			4 times	Goes out	Fin temperature protection P.C. board temperature protection	When the fin temperature exceeds 87°C during operation. When the P.C. board temperature exceeds 70°C during operation.	<ul style="list-style-type: none"> <li>• Check refrigerant circuit and refrigerant amount.</li> <li>• Refer to 10-6.⑥ "Check of outdoor fan motor".</li> </ul>
			5 times	Goes out	High-pressure protection	When the outdoor heat exchanger temperature exceeds 70°C during cooling or when indoor gas pipe temperature exceeds 70°C during heating.	<ul style="list-style-type: none"> <li>• Check around of gas and the refrigerant circuit.</li> <li>• Check of stop valve.</li> </ul>
			8 times	Goes out	Converter protection	When a failure is detected in the operation of the converter during operation.	• Replace the power board.
			9 times	Goes out	Bus-bar voltage protection (1) Bus-bar voltage protection (2)	When the bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating. When the bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.	• Replace the power board.
			13 times	Goes out	Outdoor fan motor	When failure occurs continuously three times within 30 seconds after the fan gets started.	• Refer to 10-6.⑥ "Check of outdoor fan motor".
			8 times	Lighting	Current sensor protection	When a short or open circuit is detected in the current sensor during compressor operating.	• Replace the power board.
			11 times	Lighting	Communication between P.C. boards protection	Communication error occurs between the outdoor electronic control P.C. board and power board for more than 10 seconds.	• Check the connecting wire between outdoor electronic control P.C. board and power board.
			12 times	Lighting	Zero cross detecting circuit protection	When zero cross signal cannot be detected while the compressor is operating.	• Check the connecting wire among outdoor electronic control P.C. board, noise filter P.C. board and power board.

NOTE 1. The location of LED is illustrated at the right figure. Refer to 10-7.1.  
2. LED is lighted during normal operation.

Outdoor electronic control P.C. board (Parts side)



The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.  
(Example) When the flashing frequency is "2".

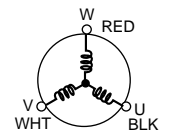
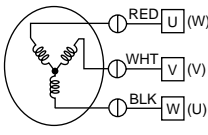
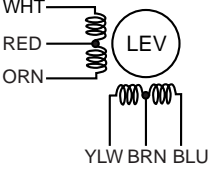




No.	Symptom	Indication		Abnormal point / Condition	Condition	Correspondence
		LED1(Red)	LED2(Yellow)			
20	Outdoor unit operates.	Once	Lighting	Primary current protection	When the input current exceeds 15A.	These symptoms do not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
				Secondary current protection	When the current of the compressor exceeds 15A.	
21		Twice	Lighting	High-pressure protection	When the indoor gas pipe temperature exceeds 45°C during heating.	
				Defrosting in cooling	When the indoor gas pipe temperature falls 3°C or below during cooling.	
22		3 times	Lighting	Discharge temperature protection	When the discharge temperature exceeds 100°C during operation.	
23	4 times	Lighting	Low discharge temperature protection	When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 39°C for more than 20 minutes.	• Refer to 10-6.ⓐ "Check of LEV". • Check refrigerant circuit and refrigerant amount.	
24	5 times	Lighting	Cooling high-pressure protection	When the outdoor heat exchanger temperature exceeds 58°C during operation.	This symptom does not mean any abnormality of the product, but check the following points. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.	
25	Outdoor unit operates	9 times	Lighting	Inverter check mode	When the unit is operated with emergency operation switch.	—
26		Lighting	Lighting	Normal	—	—

## 10-5. Trouble criterion of main parts

### MUZ-GB50VA

Part name	Check method and criterion	Figure							
Defrost thermistor (RT61) Ambient temperature thermistor (RT65) Outdoor heat exchanger temperature thermistor (RT68)	Measure the resistance with a tester.  Refer to 10-7. "Test point diagram and voltage", 1. "Outdoor electronic control P.C. board", the chart of thermistor.								
Discharge temperature thermistor (RT62)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.								
Fin temperature thermistor (RT64)	Refer to 10-7. "Test point diagram and voltage", 1. "Outdoor electronic control P.C. board", the chart of thermistor.								
Compressor	Measure the resistance between terminals using a tester. (Winding temperature : -10°C ~ 40°C)  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Normal</td> </tr> <tr> <td style="text-align: center;">0.40Ω ~ 0.49Ω</td> </tr> </table>	Normal	0.40Ω ~ 0.49Ω						
Normal									
0.40Ω ~ 0.49Ω									
Outdoor fan motor	Measure the resistance between lead wires using a tester. (Part temperature : -10°C ~ 40°C)  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Color of lead wire</td> <td style="text-align: center;">Normal</td> </tr> <tr> <td>RED - BLK</td> <td rowspan="3" style="text-align: center;">13.4Ω ~ 16.4Ω</td> </tr> <tr> <td>BLK - WHT</td> </tr> <tr> <td>WHT - RED</td> </tr> </table>	Color of lead wire	Normal	RED - BLK	13.4Ω ~ 16.4Ω	BLK - WHT	WHT - RED		
Color of lead wire	Normal								
RED - BLK	13.4Ω ~ 16.4Ω								
BLK - WHT									
WHT - RED									
R. V. coil	Measure the resistance using a tester. (Part temperature : -10°C ~ 40°C)  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Normal</td> </tr> <tr> <td style="text-align: center;">2.6kΩ ~ 3.3kΩ</td> </tr> </table>	Normal	2.6kΩ ~ 3.3kΩ						
Normal									
2.6kΩ ~ 3.3kΩ									
Linear expansion valve	Measure the resistance using a tester. (Part temperature : -10°C ~ 40°C)  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Color of lead wire</td> <td style="text-align: center;">Normal</td> </tr> <tr> <td>WHT - RED</td> <td rowspan="4" style="text-align: center;">37.4Ω ~ 53.9Ω</td> </tr> <tr> <td>RED - ORN</td> </tr> <tr> <td>YLW - BRN</td> </tr> <tr> <td>BRN - BLU</td> </tr> </table>	Color of lead wire	Normal	WHT - RED	37.4Ω ~ 53.9Ω	RED - ORN	YLW - BRN	BRN - BLU	
Color of lead wire	Normal								
WHT - RED	37.4Ω ~ 53.9Ω								
RED - ORN									
YLW - BRN									
BRN - BLU									

## 10-6. Troubleshooting flow

### MUZ-GB50VA

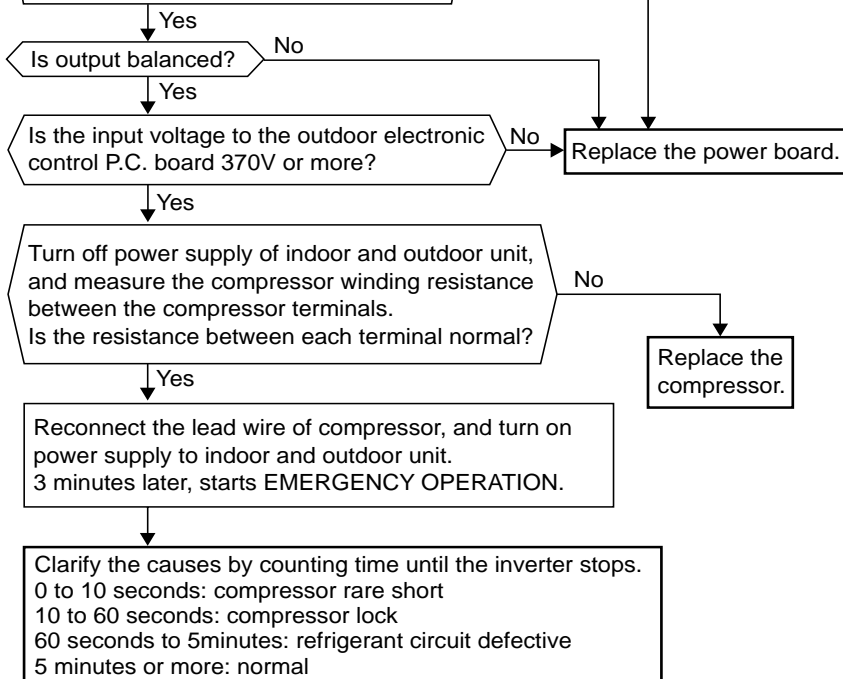
#### Ⓐ How to check inverter/ compressor

Disconnect the terminal of the compressor. 3 minutes after turning on the power supply, start EMERGENCY OPERATION.

Measure the voltage between each lead wire leading to the compressor.  
 U (BLK) - V (WHT)  
 V (WHT) - W (RED)  
 W (RED) - U (BLK)  
 Is voltage output on right table?

- ※
- After the outdoor fan starts running, wait for 1 minutes or more before measuring the voltage.
  - The output voltage values have the tolerance of  $\pm 20\%$ .

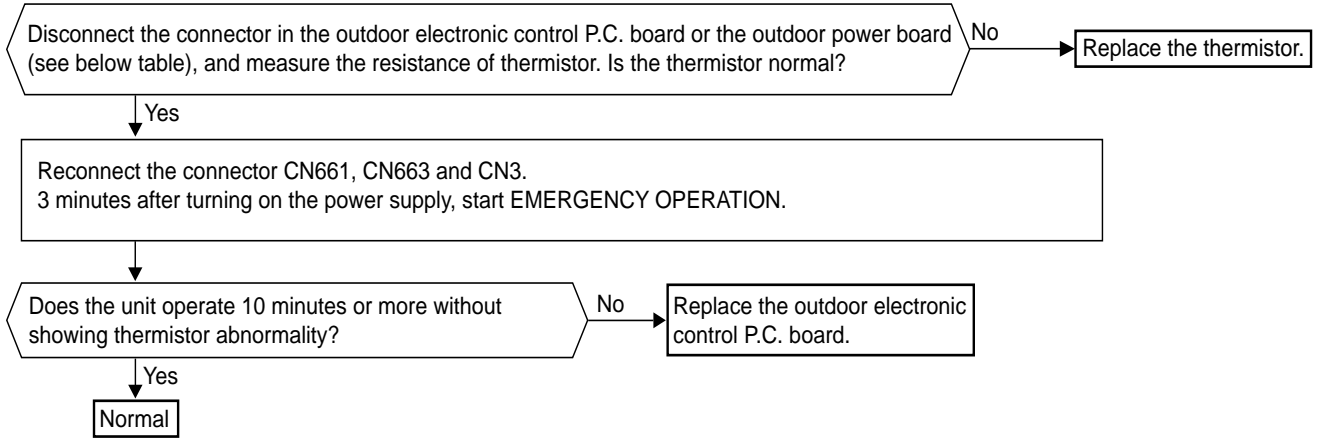
COOL	HEAT
122V~154V (56Hz~71Hz)	74V~126V (30Hz~58Hz)





- When OPERATION INDICATOR lamp flashes 6-time.
- When thermistor is abnormal.

### Ⓑ Check of outdoor thermistors

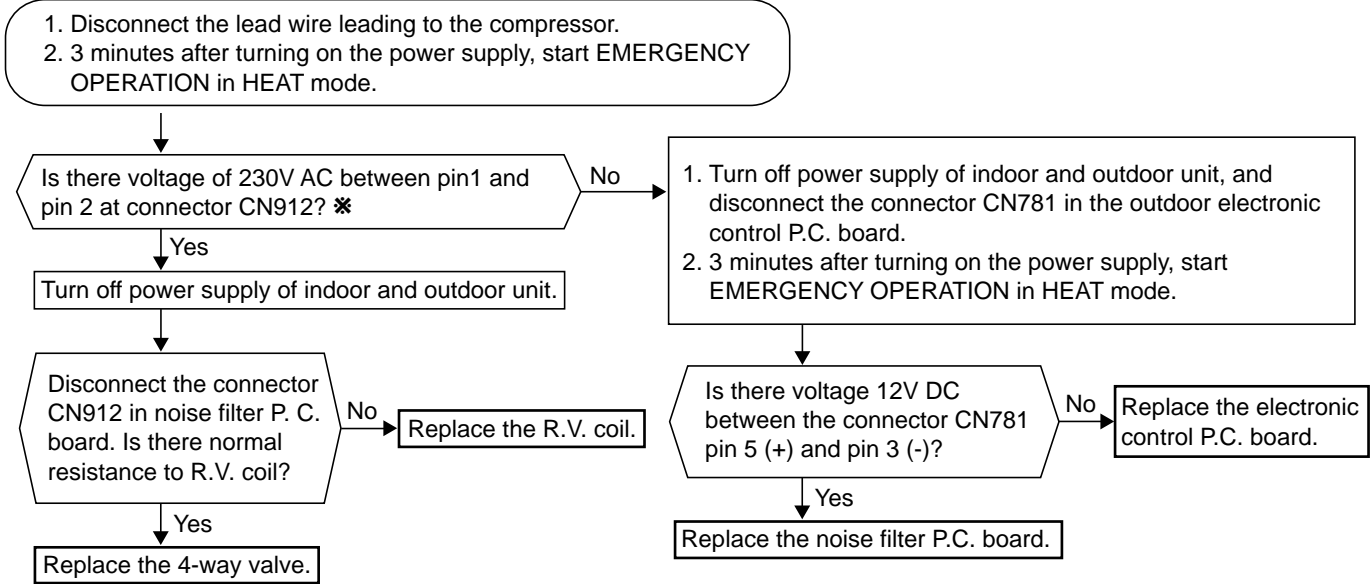


Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN661 pin1 and pin2	Outdoor electronic control P.C. board
Discharge temperature	RT62	Between CN661 pin3 and pin4	
Outdoor heat exchanger temperature	RT68	Between CN661 pin7 and pin8	
Ambient temperature	RT65	Between CN663 pin1 and pin2	
Fin temperature	RT64	Between CN3 pin1 and pin2	Outdoor power board

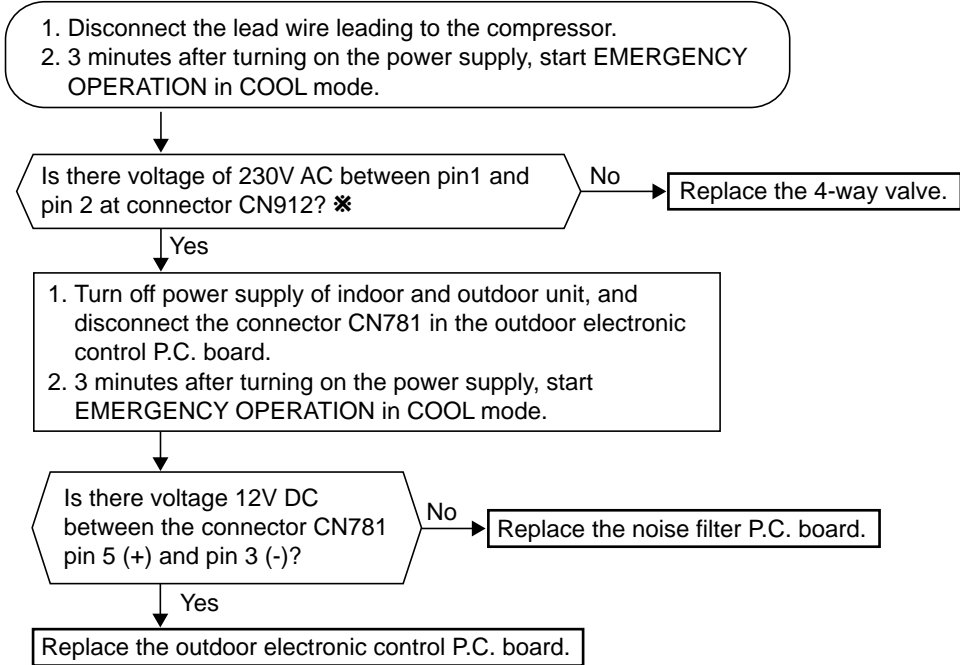
The cooling operation or heating operation does not operate. (LED display: Both LED1 and LED2 lighting)

**© Check of R.V. coil**

**• When heating operation does not work.**



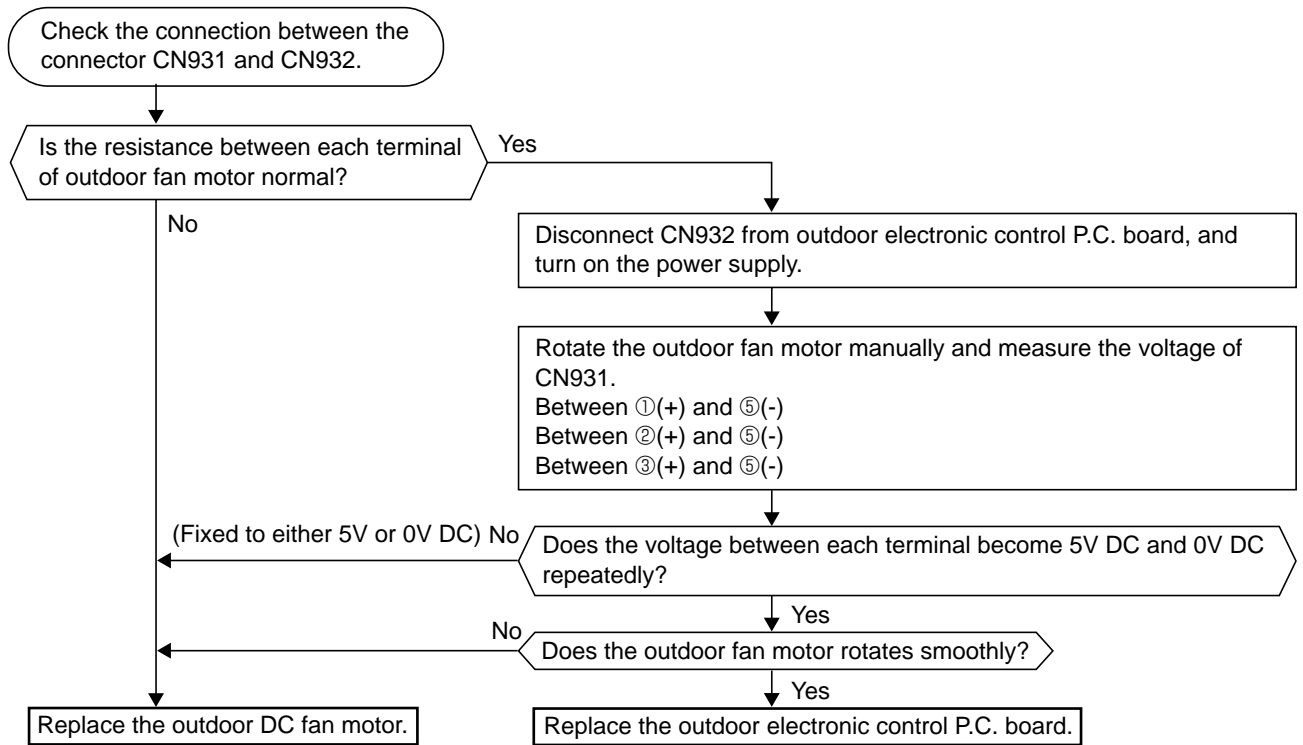
**• When cooling operation does not work.**



\* If the connector CN912 is not connected or R.V. coil is open, voltage occurs between terminals even when the control is OFF.

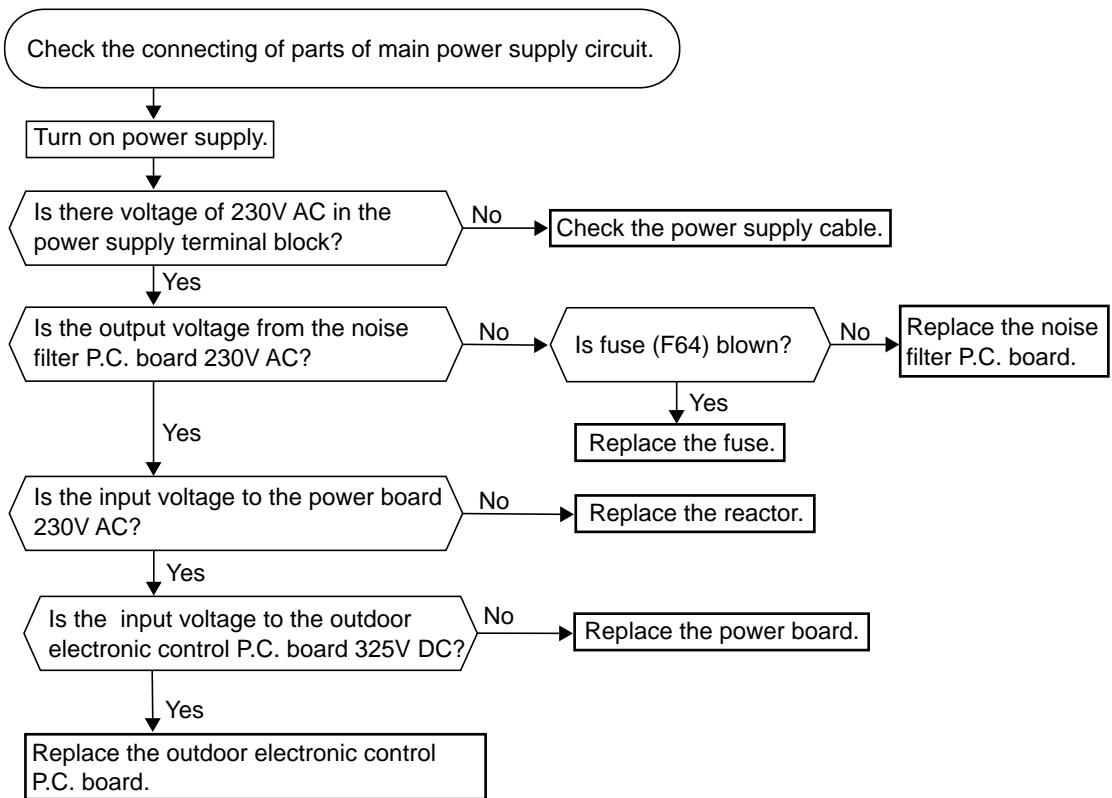
• Fan motor does not operate or stops operating shortly after starting the operation.

**㉓ Check of outdoor fan motor**



Outdoor unit does not operate. (LED display: display OFF)

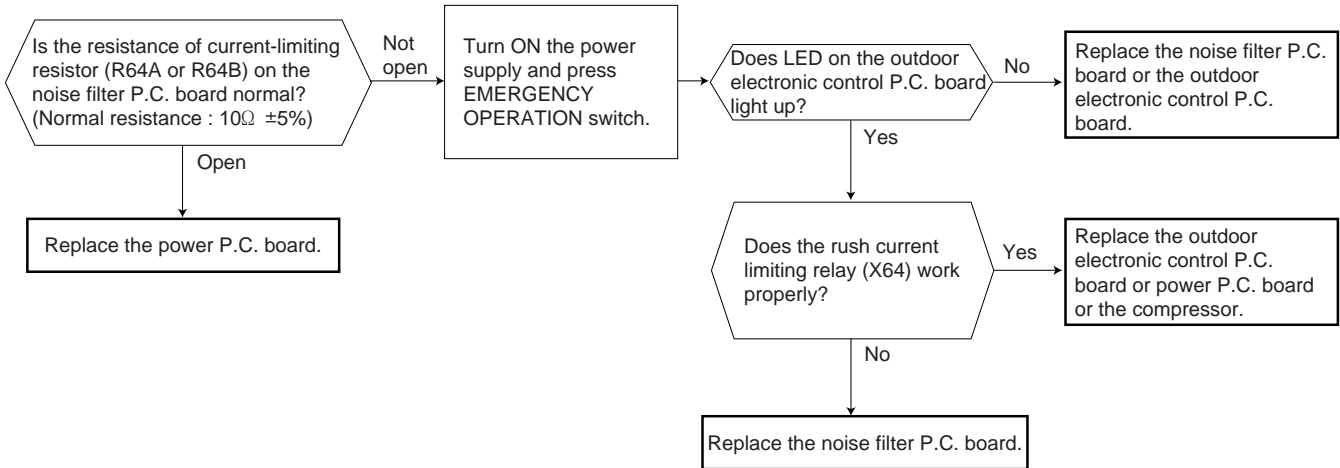
**㉔ Check of power supply**



Outdoor unit does not operate at all, or stops immediately due to overcurrent.

**㊦ Check of current-limiting resistor**

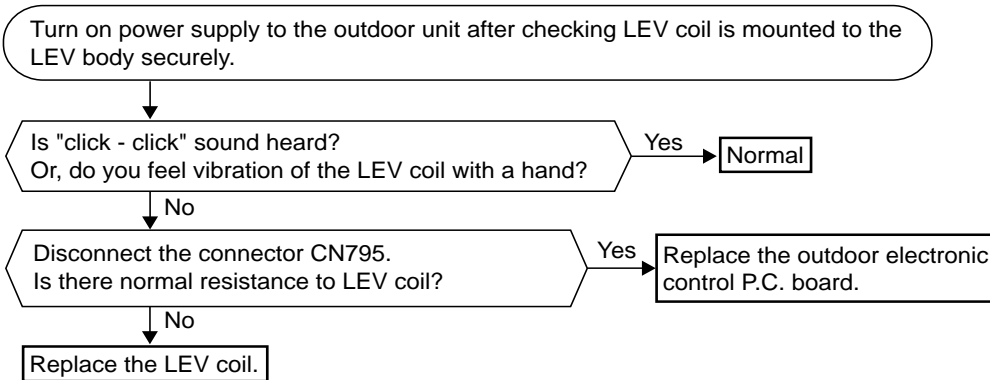
When the current-limiting resistor is open, the rush current limiting relay (X64) may not work properly.



● Check other electric parts in the main circuit together in the case that the current-limiting resistor is defective.

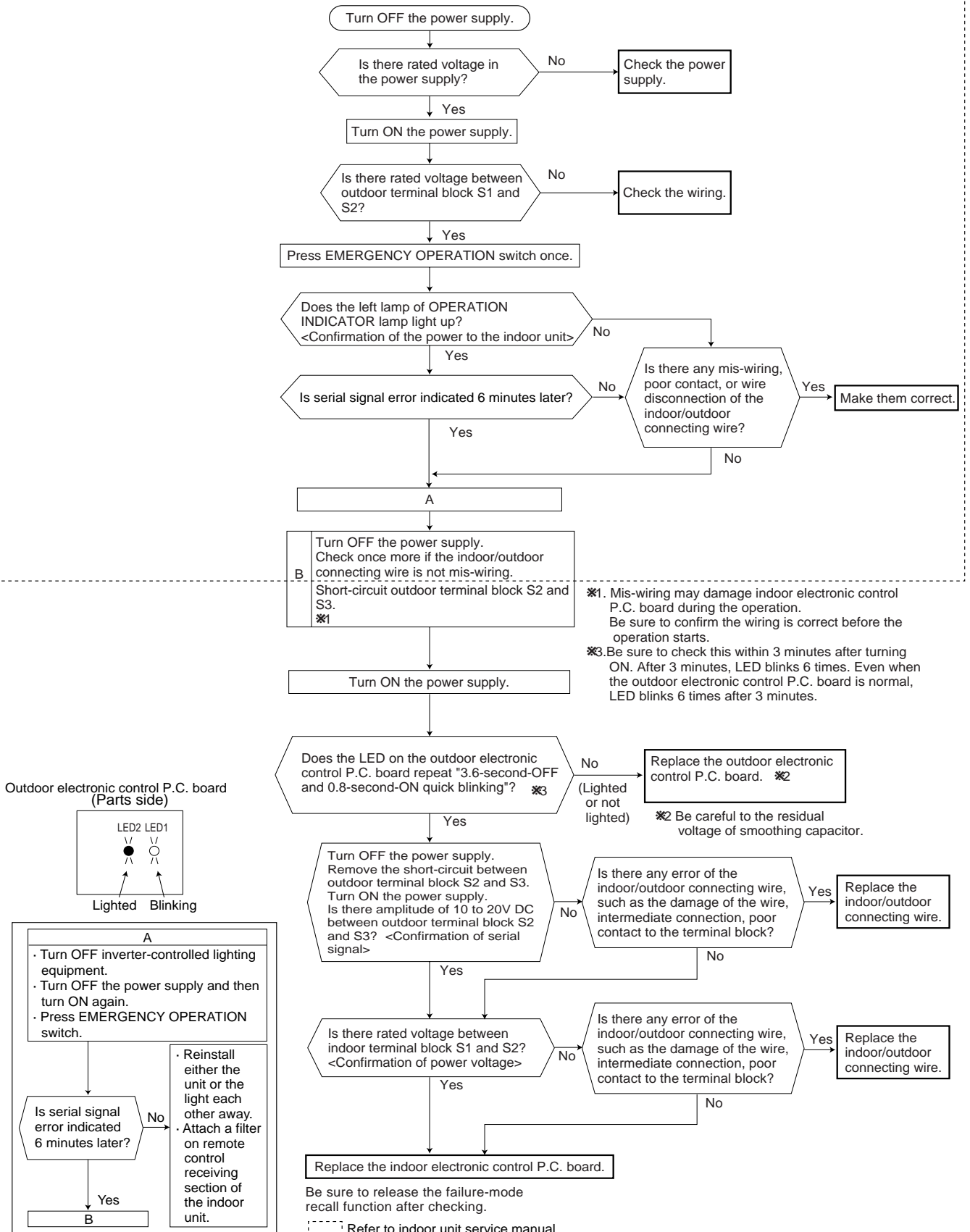
- When cooling, heat exchanger of non-operating indoor unit frosts.
- When heating, non-operating indoor unit get warm.

**㊦ Check of LEV**

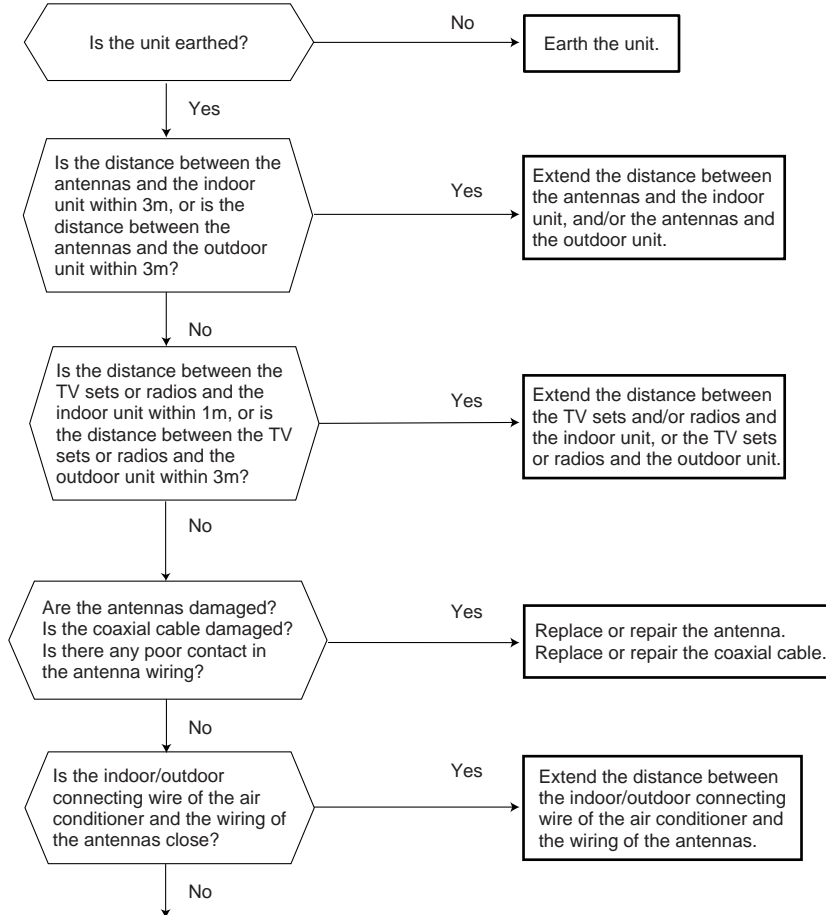


- When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch. Indoor unit does not operate.
- When OPERATION INDICATOR lamp flashes ON and OFF in every 0.5-second. Outdoor unit doesn't operate.

### Ⓜ How to check mis-wiring and serial signal error (when outdoor unit does not work)



## ① Electromagnetic noise enters into TV sets or radios



Even if all of the above conditions is fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).

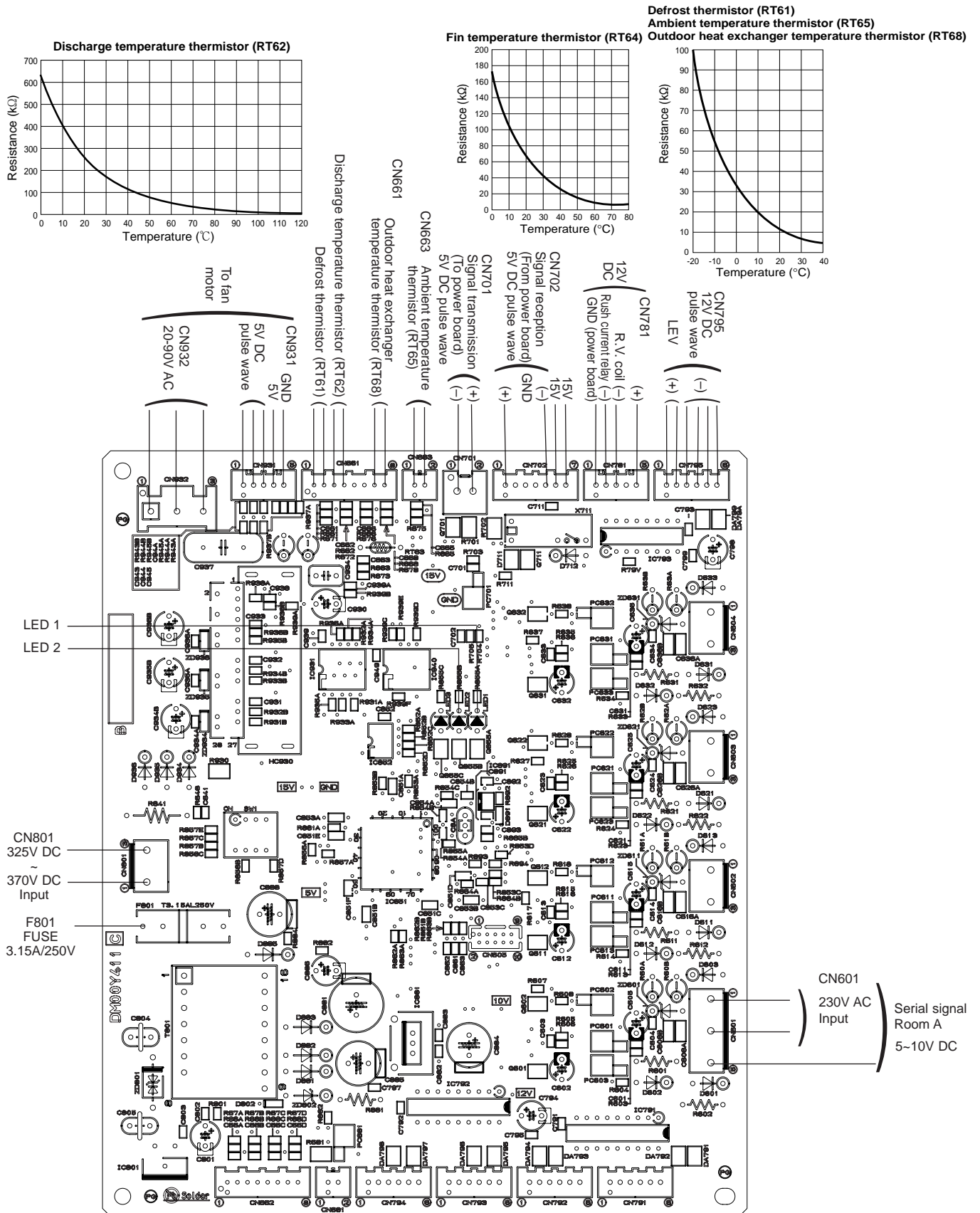
Check the followings before asking for service.

- 1.Devices affected by the electromagnetic noise  
TV sets, radios (FM/AM broadcast, shortwave)
- 2.Channel, frequency, broadcast station affected by the electromagnetic noise
- 3.Channel, frequency, broadcast station unaffected by the electromagnetic noise
- 4.Layout of ;  
indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding wire, antennas, wiring from antennas, receiver
- 5.Electric field intensity of the broadcast station affected by the electromagnetic noise
- 6.Presence or absence of amplifier such as booster
- 7.Operation condition of air conditioner when the electromagnetic noise enters in.
  - 1)Turn OFF the power supply once, and then turn ON the power supply. In this situation check for the electromagnetic noise.
  - 2)Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
  - 3)After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
  - 4)Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation check for the electromagnetic noise.

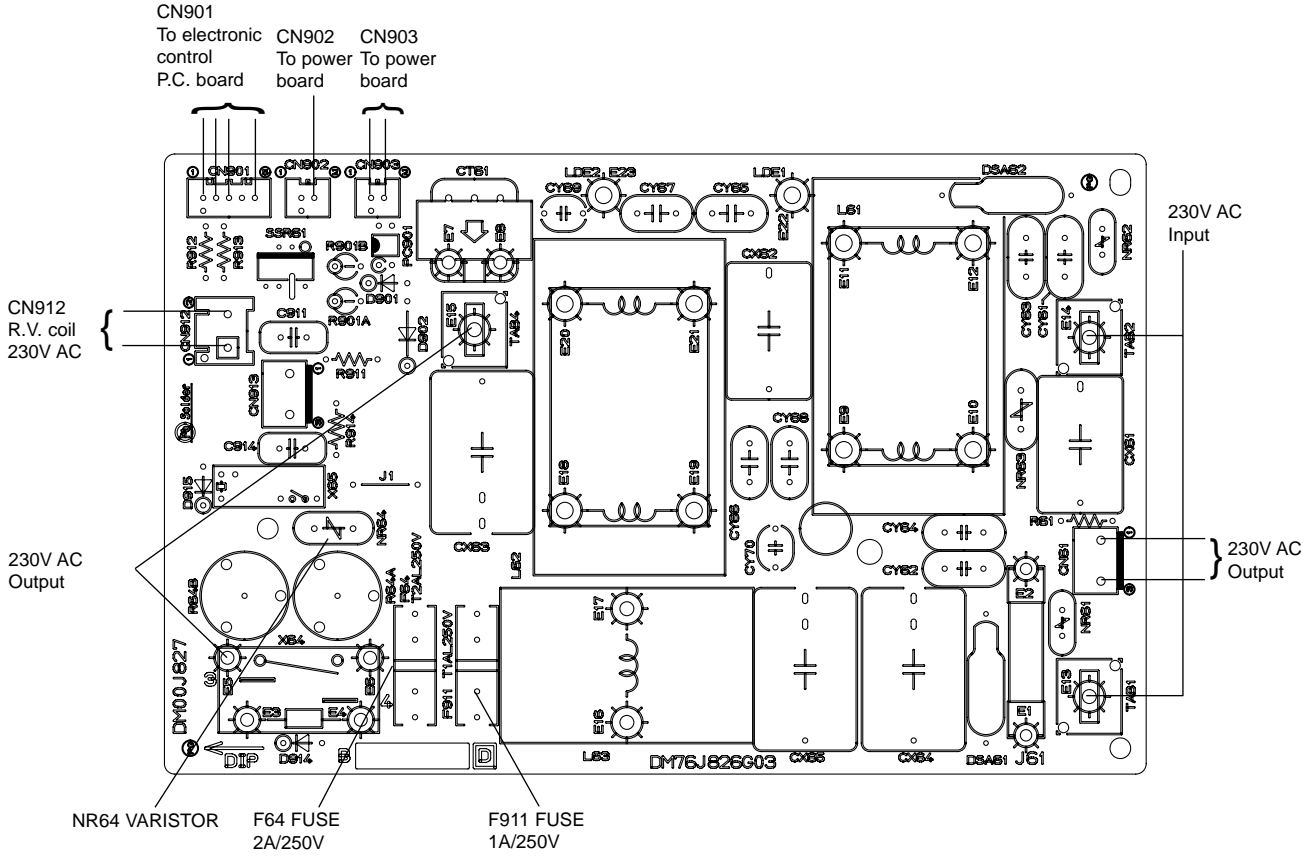
After checking the above, consult the service representative.

# 10-7. Test point diagram and voltage

## 1. Outdoor electronic control P.C. board MUZ-GB50VA

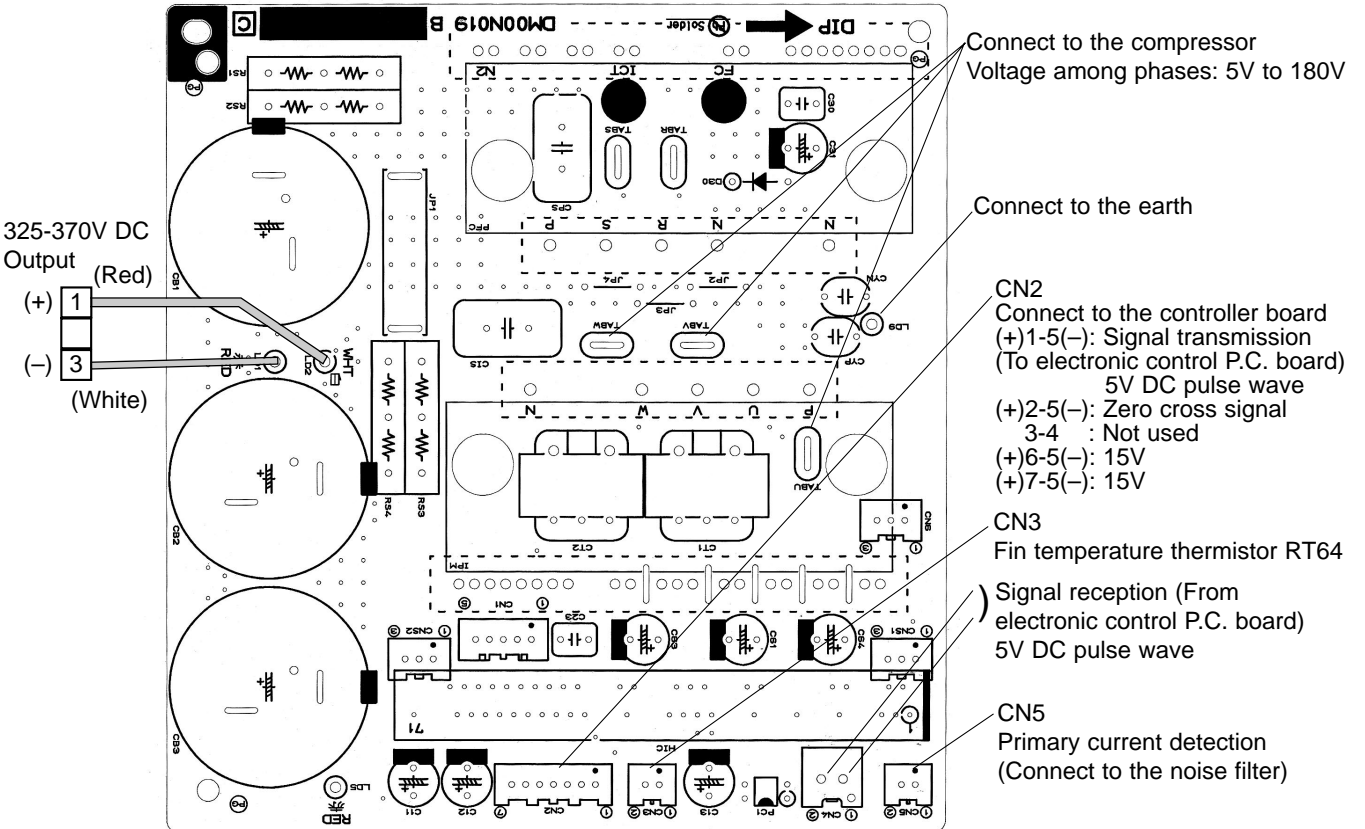
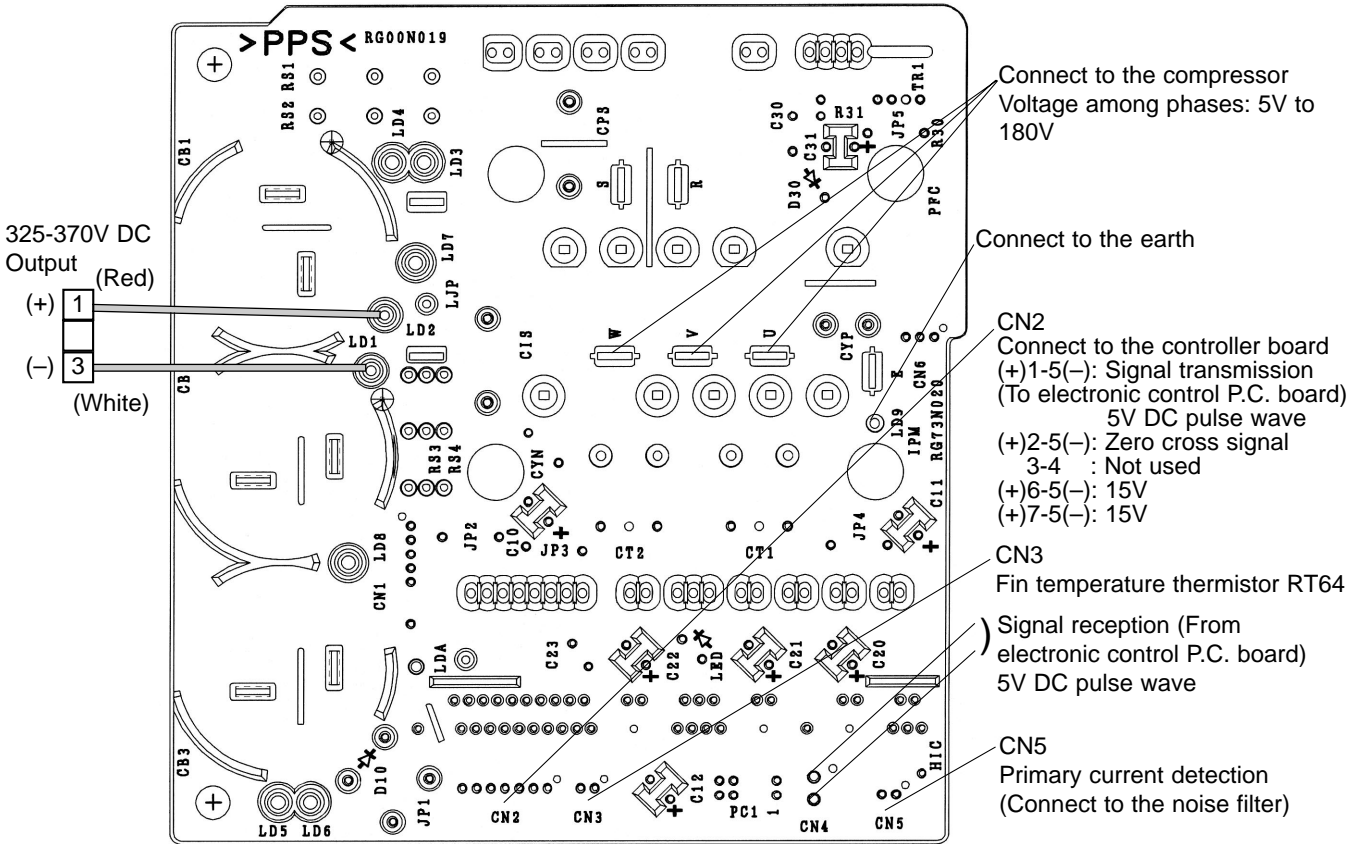


**2. Noise filter P.C. board**  
**MUZ-GB50VA**





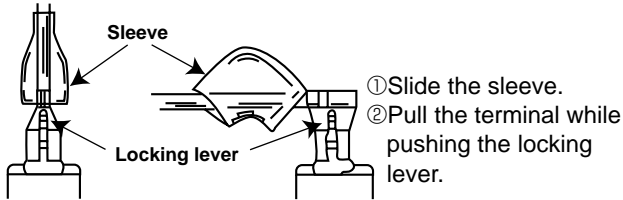
### 3. Outdoor power board MUZ-GB50VA



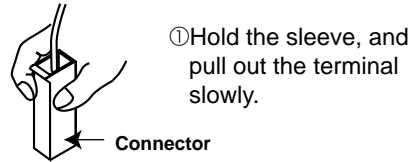
<"Terminal with locking mechanism" Detaching points>

The terminal which has the locking mechanism can be detached as shown below.  
 There are two types ( Refer to (1) and (2)) of the terminal with locking mechanism.  
 The terminal without locking mechanism can be detached by pulling it out.  
 Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



(2) The terminal with this connector has the locking mechanism.



**MUZ-GB50VA**

**OUTDOOR UNIT**

OPERATING PROCEDURE	PHOTOS
<p><b>1. Removing the cabinet</b></p> <ol style="list-style-type: none"> <li>(1) Remove the screws of the service panel.</li> <li>(2) Remove the screws of the top panel.</li> <li>(3) Remove the screw of the valve cover.</li> <li>(4) Remove the service panel.</li> <li>(5) Remove the top panel.</li> <li>(6) Remove the valve cover.</li> <li>(7) Remove the screws of the cabinet.</li> <li>(8) Remove the cabinet.</li> <li>(9) Remove the screws of the back panel.</li> <li>(10) Remove the back panel.</li> </ol> <p><b>Photo 3</b></p>	<p><b>Photo 1</b></p> <p><b>Photo 2</b></p>



**OPERATING PROCEDURE**

**2. Removing the inverter assembly, inverter P.C. board and power board**

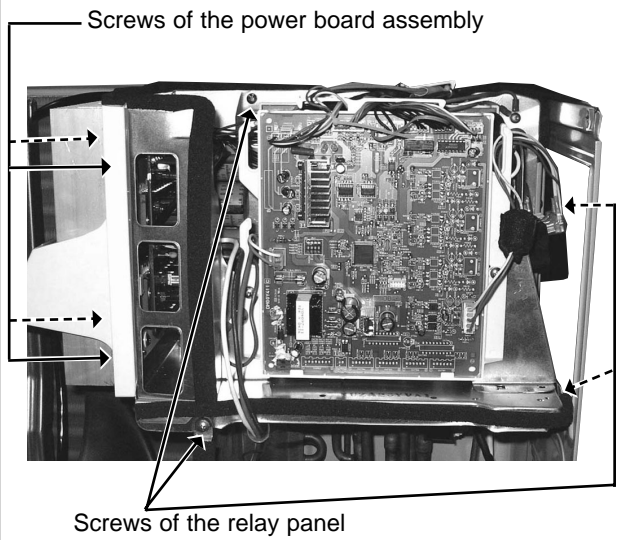
- (1) Remove the top panel, cabinet and service panel. (Refer to 1.)
- (2) Remove the back panel.(Refer to 1.)
- (3) Disconnect the following connectors;  
<Electronic control P.C. board>  
CN931 and CN932 (Fan motor)  
CN795 (LEV)  
CN661 (Discharge temperature thermistor, defrost thermistor and outdoor heat exchanger temperature thermistor)  
CN663 (Ambient temperature thermistor)  
<Noise filter P.C. board>  
CN912 (4-way valve)
- (4) Remove the compressor connector.
- (5) Remove the screws fixing the relay panel.
- (6) Remove the inverter assembly.
- (7) Disconnect all connectors and lead wires on the electronic control P.C. board.
- (8) Remove the electronic control P.C. board from the inverter assembly.
- (9) Remove the screws fixing the power board assembly.
- (10) Disconnect all connectors and lead wires on the power board.
- (11) Remove the power board from the inverter assembly.
- (12) Disconnect all connectors and lead wires on the noise filter P.C. board.
- (13) Remove the noise filter P.C. board from the inverter assembly.

**3. Removing R.V. coil**

- (1) Remove the top panel, cabinet and service panel.
- (2) Remove the back panel. (Refer to 1.)
- (3) Remove the inverter assembly. (Refer to 2.)
- (4) Remove the R.V. coil. (Photo 9)

**PHOTOS**

**Photo 4**



## OPERATING PROCEDURE

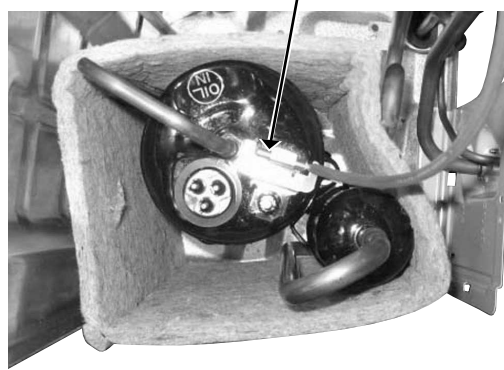
### 4. Removing the defrost thermistor, discharge temperature thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor

- (1) Remove the top panel, cabinet and service panel.  
(Refer to 1.)
- (2) Remove the back panel. (Refer to 1.)
- (3) Remove the inverter assembly. (Refer to 2.)
- (4) Pull out the defrost thermistor from its holder. (Photo 6)
- (5) Pull out the discharge temperature thermistor from its holder. (Photo 5)
- (6) Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 6)
- (7) Pull out the ambient temperature thermistor from its holder. (Photo 6)

## PHOTOS

**Photo 5**

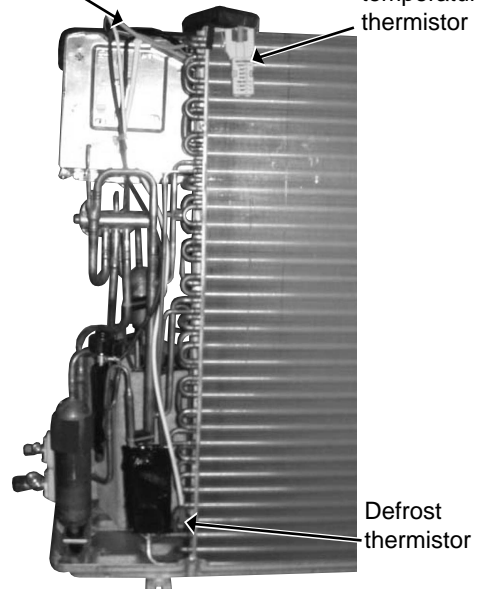
Discharge temperature thermistor



**Photo 6**

Outdoor heat exchanger temperature thermistor

Ambient temperature thermistor

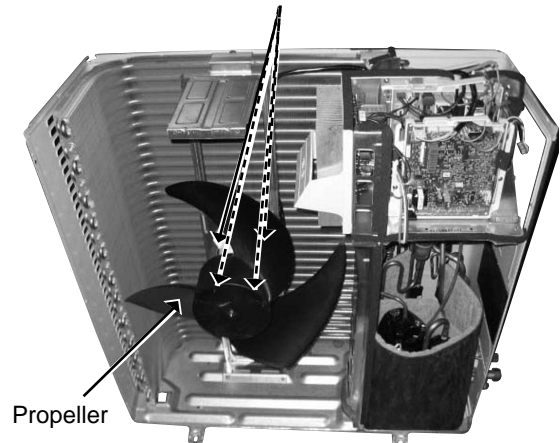


### 5. Removing outdoor fan motor

- (1) Remove the top panel, cabinet and service panel.  
(Refer to 1.)
- (2) Remove the back panel. (Refer to 1.)
- (3) Remove the inverter assembly. (Refer to 2.)
- (4) Remove the propeller.
- (5) Remove the screws fixing the fan motor.
- (6) Remove the fan motor.

**Photo 7**

Screws of the outdoor fan motor



## OPERATING PROCEDURE

### 6. Removing the compressor and 4-way valve

(1) Remove the top panel, cabinet and service panel.  
(Refer to 1.)

(2) Remove the back panel. (Refer to 1.)

(3) Remove the inverter assembly. (Refer to 2.)

(4) Recover gas from the refrigerant circuit.

**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 kg/cm<sup>2</sup> (0 MPa).

(5) Detach the welded part of the suction and the discharge pipe connected with compressor. (Photo 9)

(6) Remove the compressor nuts.

(7) Remove the compressor.

(8) Detach the welded part of 4-way valve and pipe. (Photo 8)

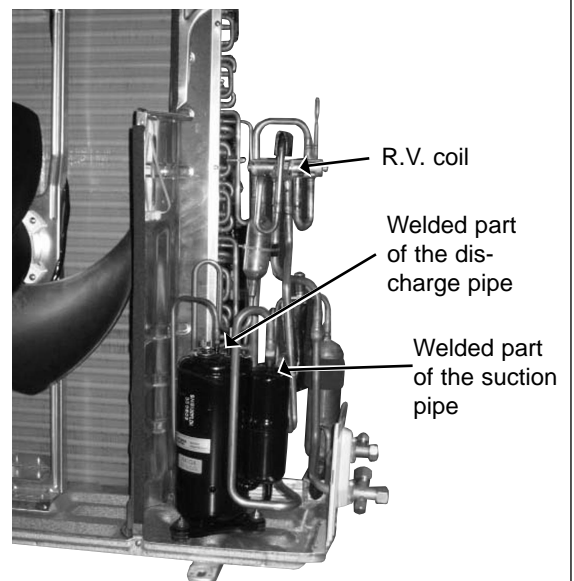
## PHOTOS

Photo 8



Welded parts of 4-way valve

Photo 9



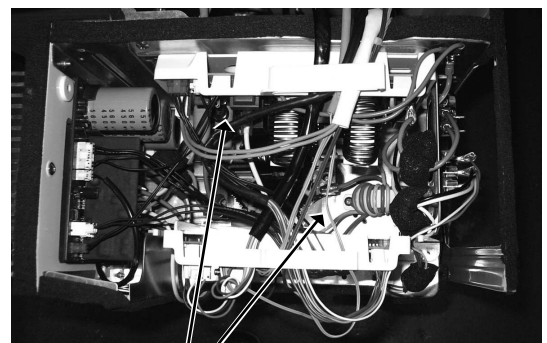
### 7. Removing the reactor

(1) Remove the top panel. (Refer to 1.)

(2) Disconnect the reactor lead wire.

(3) Remove the screws of the reactor, and remove the reactor.

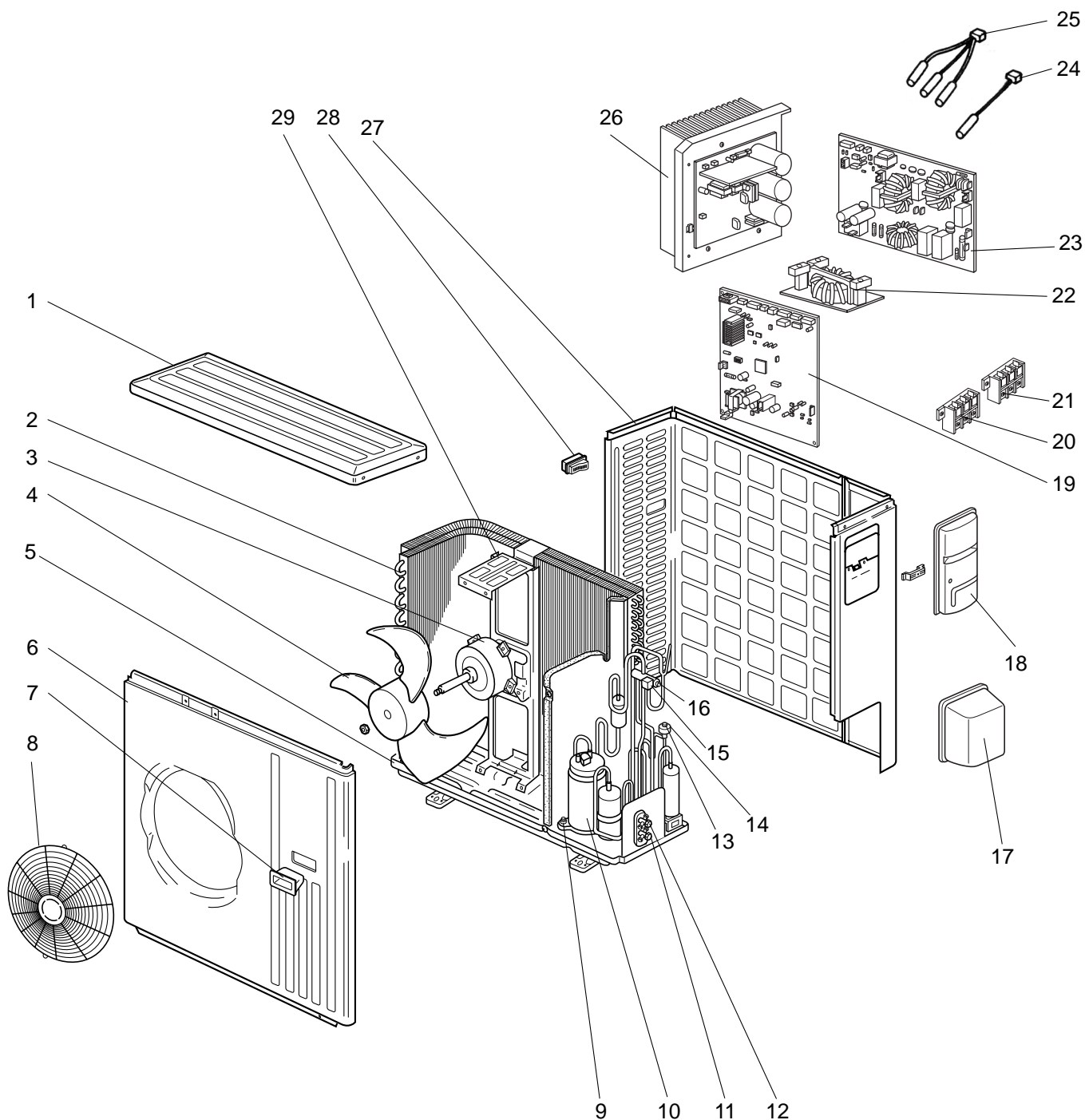
Photo 10



Screws of the reactor

MUZ-GB50VA

12-1. OUTDOOR UNIT STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS



# RoHS PARTS LIST (RoHS compliant)

## MUZ-GB50VA

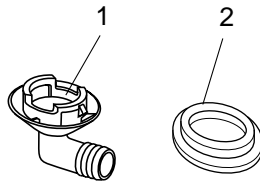
### 12-1. OUTDOOR UNIT STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part numbers that are circled are not shown in the illustration.

No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit	Remarks
					MUZ-GB 50VA - E1	
1	G	E12 819 297	TOP PANEL		1	
2	G	E12 851 630	OUTDOOR HEAT EXCHANGER		1	
3	G	E12 938 301	OUTDOOR FAN MOTOR	MF	1	RC0J60-□□
4	G	E12 851 501	PROPELLER		1	
5	G	E12 851 290	BASE		1	
6	G	E12 819 232	CABINET		1	
7	G	E12 819 009	HANDLE		1	
8	G	E12 819 521	FAN GUARD		1	
9	G	E12 065 506	COMPRESSOR RUBBER SET		3	3RUBBERS/SET
10	G	E12 939 900	COMPRESSOR	MC	1	SNB130FLDH1
11	G	E12 851 661	STOP VALVE(GAS)		1	φ12.7
12	G	E12 821 662	STOP VALVE(LIQUID)		1	φ6.35
13	G	E12 851 640	EXPANSION VALVE		1	
14	G	E12 851 493	EXPANSION VALVE COIL	LEV	1	
15	G	E12 935 490	R.V. COIL	21S4	1	
16	G	E12 891 961	4-WAY VALVE		1	
17	G	E12 819 650	VALVE COVER		1	
18	G	E12 819 245	SERVICE PANEL		1	
19	G	E12 A88 450	OUTDOOR ELECTRONIC CONTROL P.C. BOARD		1	
20	G	E12 935 374	TERMINAL BLOCK	TB1	1	3P
21	G	E12 823 375	TERMINAL BLOCK	TB2	1	3P
22	G	E12 A87 337	REACTOR	L	1	
23	G	E12 935 444	NOISE FILTER P.C. BOARD		1	
24	G	E12 935 309	AMBIENT TEMPERATURE THERMISTOR	RT65	1	
25	G	E12 851 308	THERMISTOR SET	RT61,RT62,RT68	1	DEFROST, DISCHARGE OUTDOOR HEAT EXCHANGER
26	G	E12 935 440	POWER BOARD		1	Including heat sink and RT64
27	G	E12 819 233	BACK PANEL(OUT)		1	
28	G	E12 817 009	HANDLE		1	
29	G	E12 851 515	MOTOR SUPPORT		1	
30	G	E12 127 382	FUSE	F801	1	T3.15A/250V
31	G	E12 737 382	FUSE	F911	1	T1A/250V
32	G	E12 935 385	FUSE & VARISTOR	F64,NR64	1	T2A/250V
33	G	E12 851 936	CAPILLARY TUBE(TAPER PIPE)		1	φ3.6xφ2.4x50

# RoHS PARTS LIST (RoHS compliant)

MUZ-GB50VA  
12-2. ACCESSORY



No.	RoHS	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit	Remarks
					MUZ-GB50 VA - <span style="border: 1px solid black; padding: 0 2px;">E1</span>	
1	G	E12 817 704	DRAIN SOCKET		1	
2	G	E12 444 705	DRAIN CAP		2	φ33

 **mitsubishi electric corporation**

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

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